

FLIGHT

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AIRCRAFT ENGINEER
AND AIRSHIPS

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CONTENTS

Editorial Comment:	PAGE
Longer Service Commissions ..	45
Landing in Turkey ..	46
A Parachute Drop ..	47
Mauboussin M.11 Monoplane ..	48
The King's Cup ..	50
N.A.T. Aircraft Show ..	50
Viceroy's Cup ..	50
Roberts Aeroplane Stabiliser ..	51
Private Flying and Gliding ..	52
Air Transport ..	54
Correspondence: Dr. Eckener and British Airships ..	56
1931 Weather ..	56
Airlifts from the Four Winds ..	57
Vickers Duplex Air Compressor ..	58
The Industry ..	60
Royal Air Force ..	63
Stamps and Models ..	63

DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

1932

- Jan. 15. D.H. Technical School Dance, at Portman Rooms, W.
- Jan. 16. Rugby: R.A.F. v. Bristol, at Bristol.
- Jan. 20. Rugby: R.A.F. v. Cambridge University, at Cambridge.
- Jan. 22. Scottish Flying Club's Annual Ball, Glasgow.
- Jan. 23. Reunion Dinner of Old Comrades Assoc., R.N., Seaplane Base, Port Said
- Jan. 23. Rugby: R.A.F. v. Northampton, at Northampton.
- Jan. 28. "Effect of Height on Range," Lecture by A. E. Woodward-Nutt and Flt.-Lt. A. F. C. Scroggs, before R.A.E.S.
- Jan. 28. "Indoor Flying Models," Lecture by C. H. Barnes, at City and Guilds Eng. College, S. Kensington.
- Jan. 28. Rugby: R.A.F. v. Leicester, at Leicester.
- Feb. 6. Rugby: R.A.F. v. Bedford, at Bedford.
- Feb. 10. "Some Aspects of Meteorology in Connection with Gliding and Soaring Flight," Lecture by Capt. F. Entwistle, at City and Guilds Eng. College, S. Kensington.
- Feb. 13. Rugby: R.N. v. R.A.F., at Twickenham.
- Feb. 20. Rugby: R.A.F. v. Coventry, at Coventry.
- Feb. 24. "A Flight to Abyssinia," Lecture by Sqdn.-Ldr. J. L. Vachell, before R.U.S.I.
- Feb. 24. Rugby: R.A.F. v. United Bank, at Ealing.
- Feb. 29. "Flying Boats on Commercial Air Routes," Lecture by C. H. Jackson, at City and Guilds Eng. College, S. Kensington.
- Mar. 4. Leicestershire A.C. Annual Ball.
- Mar. 9. Rugby: R.A.F. v. Oxford University, at Oxford.
- Mar. 10. "Results with the New Wind Tunnel at N.P.L.," Lecture by E. F. Relf, before R.A.E.S.
- Mar. 16. "Development of Naval Air Work," Lecture by Commodore N. F. Laurence, before R.U.S.I.
- Mar. 23. "High-Speed Flying," Lecture by Sqdn.-Ldr. A. H. Orlebar, before R.U.S.I.
- Mar. 26. Rugby: Army v. R.A.F., at Twickenham.
- Apr. 2-10. National Aircraft Show, Detroit, U.S.A.
- Apr. 13. "The North-West Frontier of India," Lecture by Maj.-Gen. S. F. Muspratt, before R.U.S.I.
- June 25. R.A.F. Display, Hendon.
- Aug. — Circuit of Europe

EDITORIAL COMMENT



SECOND step towards the elimination of the short-service officer in the Royal Air Force has been taken. Not long ago the maximum age for acceptance as a short-service officer was reduced from 25 to 22 years of age. It is now announced that the period of service "with the colours" (as the Army has it) is to be lengthened from five to six years. At the same time the lowest permissible age is now 18.

This new scheme is to be commended. The Service gains by getting more flying out of an officer after it has gone to the trouble and expense of teaching him to fly and training him in all the duties of an officer. A year is allowed for this process, and during this year the officer will rank as Acting Pilot Officer on a standard rate of pay of 13s. a day (11s. 6d. p.d. at current rates), but at the end of 12 months' approved service he will be promoted to Pilot Officer and paid at a standard rate of 16s. a day (14s. 2d. at current rates). The Service will then get five years of useful work out of him before he is transferred to the Reserve, instead of four years as under the previous scheme. As the officers will be kept longer, fewer recruits for short-service commissions will be required, and consequently fewer men will have to face the arduous prospect of obtaining civil employment when the time comes for them to transfer to the Reserve. As they may now start their service career at the age of 18, the average age of those who have to seek civil employment at that time will not be higher than it used to be, and may even be lower. At the same time, as there will be fewer short-service officers, a somewhat greater percentage of them will be able to obtain permanent commissions, and so find their career for life in the Royal Air Force. The gratuity to be paid at the end of the six years' service has been raised from £375 to £500, which makes a nice little capital for a man who is starting his real career at the age of perhaps not more than 24. He may even sometimes be in better case than a University man who takes his degree at 22, but to whom no such gratuity is assured.

It is rather interesting to compare the probable prospects of a young man who has to decide between four years at a University and six years in the Royal Air Force. Let us suppose that he has been educated at a public school. There has been much interesting discussion in the Press lately about the prospects of a public school boy (with or without a University degree) who enters on a business career. The weight of argument and experience has gone to show that, though such a man does not start as a well-trained clerk, his general educational training fits him to rise to high posts in the world of commerce. The young man who decides on six years in the Royal Air Force misses the additional training in general education which a University offers, but, on the other hand, he gains a specialist training in a mechanical subject in addition to a certain kind of training in businesslike ways. This is a mechanical age, and on the face of it a man with a good knowledge of internal-combustion engines should start with an advantage. Still, this knowledge is only a limited recommendation. At the moment the ability to fly helps only a very few men. In the future flying may be considered as generally desirable an accomplishment as riding was in pre-Victorian days; but that time is not yet. The R.A.F. reservist must rely for his bread and butter on his mechanical training rather than on his flying abilities. His other accomplishment is some knowledge of accounting and writing business letters, as those arts are practised in the fighting Services. The business world despises Service methods; but, none the less, many an officer on demobilisation in 1919 found that his Army training did make a useful introduction to business methods. Finally, the R.A.F. reservist has £500 in his pocket, while the young graduate may have next to nothing.

The experience of the R.A.F. Officers' Employment Association has been that employment can be found for most R.A.F. reservists. We doubt if this would be the case if the numbers of the reservists were as great as the numbers of men coming down each year from the Universities. The majority of the latter do not drift at once to the workhouse. They mostly find employment. Obviously, the University course opens up more opportunities. We have not forgotten the fact that some men cannot afford a University, which means three or four years of spending; while the Royal Air Force means six years of earning, with £500 at the end. But the latter may be a dead end. The case we were considering was naturally that of a man who had an open choice. In that case the £500 stands in the same relation to the University degree as golden eggs stand to the goose which can lay them. It is obviously better to own such a goose than to be presented with some of the eggs.

In fact, we consider the acceptance of a short-service commission as a very hazardous speculation for a young man who has to earn his living. This latest scheme of the Air Ministry is good because it has somewhat improved the prospects offered to the short-service officer, and also because it means more pilots of experience in the Royal Air Force, but chiefly because it still further reduces the number of men who will receive short-service commissions.

For an increase of pilots we believe that the Royal Air Force must rely more and more upon the non-commissioned ranks.

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The boast has sometimes been made that flying tends to abolish frontiers and to make for the comity of nations. Such ideas have not yet, apparently, penetrated to Turkey. Quite recently Mr. Mollison,

Landing
in Turkey

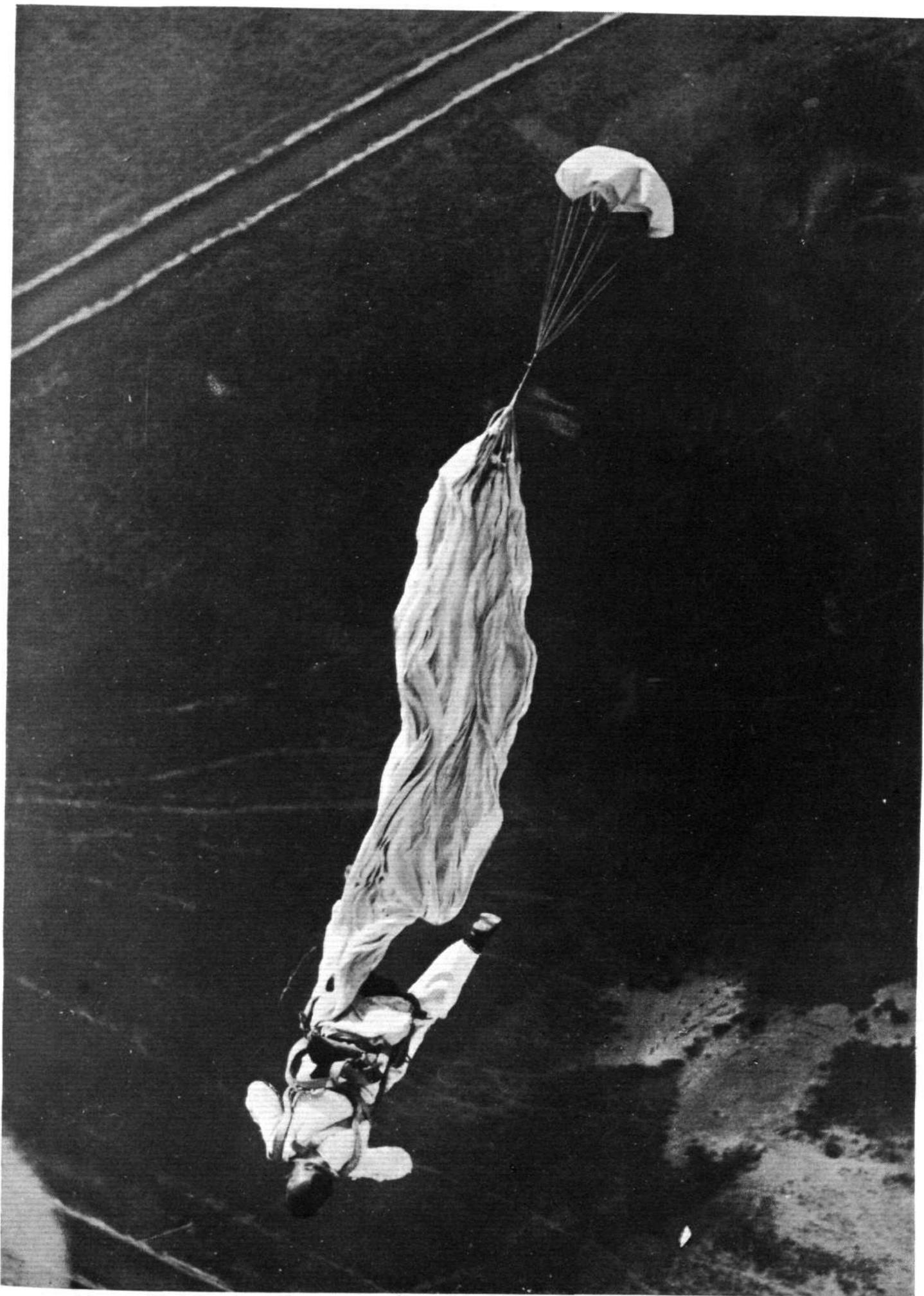
holder of the record time from Australia to England, was flying back from Egypt to this country, and, doubtless in order

to avoid a crossing of the Mediterranean in a landplane, decided to fly round through Asia Minor. A blinding snowstorm induced him to land at Konia, where he hoped just to spend a night. He reports that he was at once surrounded by soldiers, and locked up in a hotel with a sentry outside the door. Though hungry and cold, he was not given any food until very late. He was examined by the civil and military authorities on the supposition that he was a spy, although his aeroplane was obviously not equipped with wireless, photographic apparatus, or firearms. He was not, he says, allowed to communicate with the British Embassy at Angora for three days. When he recovered his aeroplane he found that instruments had been removed from the dashboard and part of the floor had been ripped up.

Probably the Turkish point of view is that if foreign pilots will fly over Turkey without having provided themselves with proper papers they have only themselves to blame if they are regarded with suspicion, and in the accounts of many flights cases have been recorded of pilots finding themselves in difficulties through having failed to carry papers which will explain matters to the authorities of countries where they have landed. It really does seem that a number of pilots are quite casual in such matters. Bert Hinkler has told more than one amusing story of his difficulties after landing unexpectedly in foreign countries. But the circumstances are not always amusing, and precautions ought to be taken. Royal Aero Club triptiques will carry one over a certain number of countries, but a pilot who sets out roaming is never very sure where he will want to land, and he should make preparations accordingly.

This consideration, however, does not excuse the Turkish officials for the treatment which they are alleged to have doled out to Mr. Mollison. Turkey has lately proclaimed loudly that it is as civilised as any European nation. Have not Turkish women abandoned the veil? Inquiries from a pilot who lands unexpectedly are only natural and reasonable, but to assume that a foreigner is a spy and to treat him with harshness, especially when there are no suspicious circumstances about him except an absence of papers, is not conduct worthy of a nation which claims to be civilised; while to prevent him from communicating with his Ambassador is a scandal. Turkey lies on the most suitable route for landplanes between Europe and Africa, and it is quite time that steps were taken by the Turkish Government to make civil flying across Turkey not quite so hazardous an adventure as flying across darkest Africa.





“FACILIS DESCENSUS”: A wonderful photograph of Lieut. J. Reece making a parachute descent over Melbourne Airport. The parachute is an Irvin, and it will be seen that the pilot 'chute has just pulled the main parachute out of its case.

The Mauboussin M.11 Monoplane

REFERENCE was made a short time ago to the long solo flight made by René Lefèvre in a Mauboussin monoplane with 40-h.p. Salmson A.D.9 engine from France to Madagascar. At the time details of the later stages of the flight were not available, but the information has now come to hand, as well as some particulars of the machine used by Lefèvre, and as the flight was a very fine one, it is thought that a few notes on it and on the machine may be of interest.

The earlier stages of Lefèvre's flight were dealt with in the previous reference, but will be included here for the sake of completeness. The machine was standard in all respects except for the fitting of extra fuel and oil tanks for the larger amount of petrol which it was desired to carry in order to increase the length of stages. The weight of the extra fuel took the place of that of the passenger normally carried.

Leaving Cannes on December 3, Lefèvre reached Gabes, having flown via Corsica-Sardinia and Tunis. On December 4 Benghasi was reached, but bad weather detained Lefèvre until December 6, when he covered the stage Benghasi-Mersa Matruh. Wadi Halfa was reached on December 7, the route being via Cairo. The next day the flight was continued to Khartoum, and to Juba on December 9. Juba-Kisumu was flown on December 10, but then bad weather again held up Lefèvre until December 12, when he flew from Kisumu to Mombasa. On December 13 Mozambique was reached, via Lindi, and the final stage, Mozambique-Tananarive, was completed on December 14, the total journey having occupied a lapsed time of 12 days, and the actual flying time being 10 days. In Madagascar, M. Lefèvre will try to utilise the machine for commercial work on a small scale, the machine having a pay load of about 220 lb., and a fuel consumption of approximately $2\frac{1}{2}$ gallons per hour at a cruising speed of some 75 m.p.h.

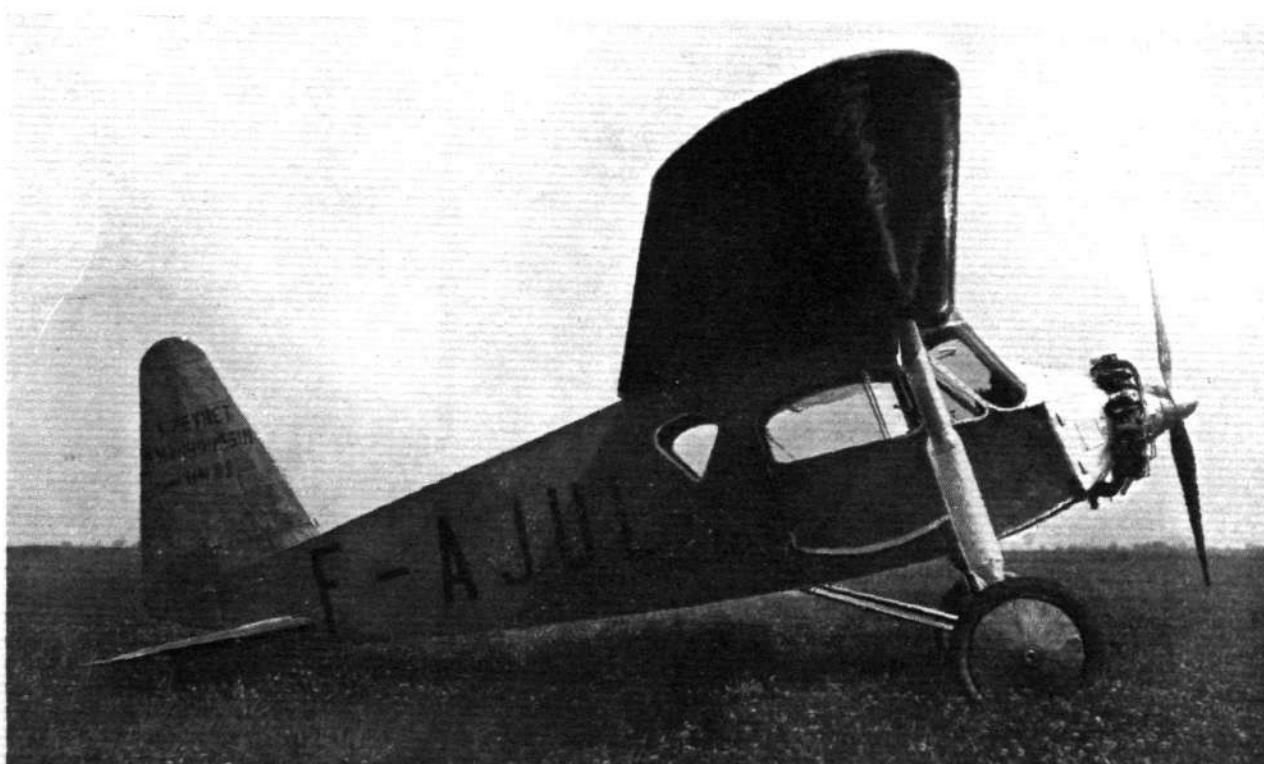
The Machine

The Mauboussin M.11 is not a new type, two having been entered and one started in the International Touring Competition (Circuit of Europe) in 1930. On that occasion, however, the machine had bad luck, and did not reach any of the British controls, so that it will be some-

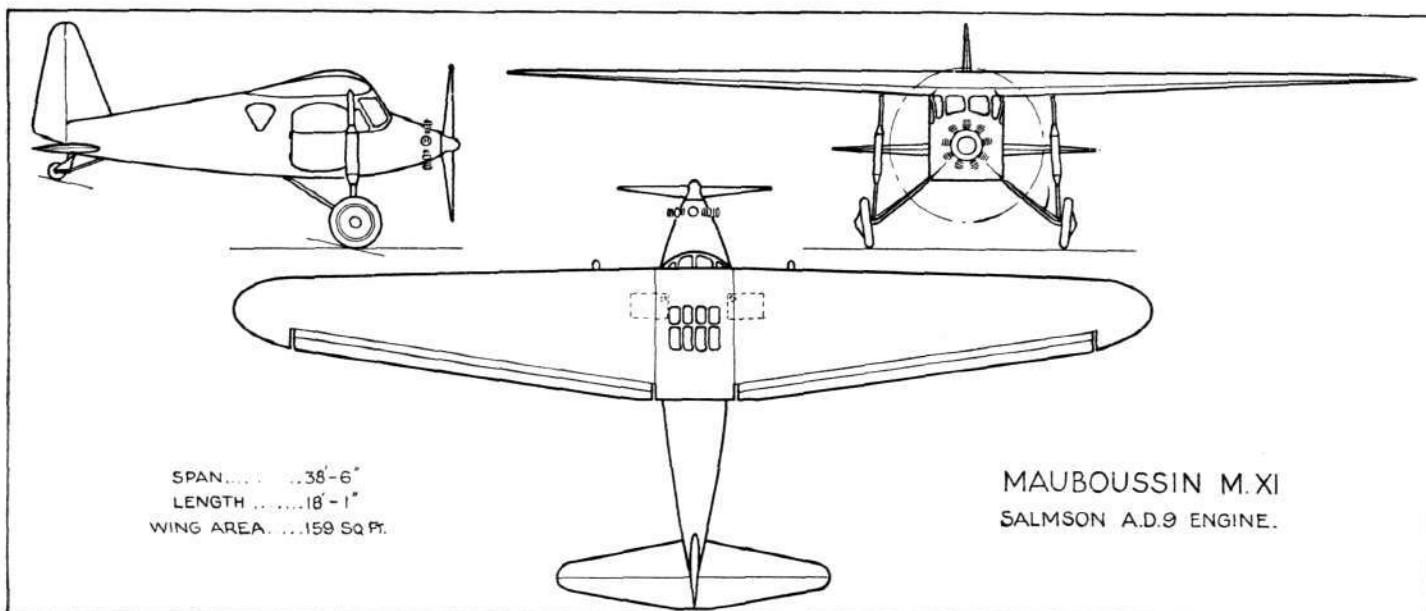


THE FLIGHT TO MADAGASCAR: Sketch map of the route followed by Lefèvre in his Mauboussin M.11. This is probably the lowest powered aeroplane to make the Mediterranean crossing from Sardinia to the African coast.

thing of a stranger to most FLIGHT readers. The designer of the M.11 is M. P. Mauboussin, whose offices are at 3, Rue de Choiseul, Paris. M. Mauboussin does not build his own machines, but has them built for him by M. Louis Peyret, whose name will be very familiar to our readers as that of the man who designed and built the Peyret glider on which some years ago the late M. Maneyrol won the *Daily Mail* Gliding Competition at Firle Beacon. A previous type, the M.10, was a single-seater very similar



THE MAUBOUSSIN M.11: This is the actual machine, F-AJUL, flown by Lefèvre from France to Madagascar. The engine is a 40 h.p. Salmson A.D.9.



in general appearance, but fitted with a British A.B.C. "Scorpion" engine. A more recent type, the M.12, is an open low-wing cantilever monoplane, also fitted with the Salmson A.D.9 engine.

The M.11 is, as the illustrations show, a high-wing cantilever cabin monoplane, the outstanding features being a wing of high aspect ratio and pronounced taper, and an extremely short fuselage. The short lever arm of the tail is, however, made up for to some extent by tail surfaces of considerable area and, like the wing, of high aspect ratio. For all that one would rather imagine the machine to be somewhat sensitive on fore-and-aft and directional controls.

Structurally, the M.11 is a very simple, straightforward piece of work, with wood, and particularly plywood, forming the greater part of the structure.

The fuselage is of the flat-sided type with plywood covering on a light skeleton of longerons and frames. The cabin has two seats, slightly staggered in relation to each other, and the view forward is fairly good by virtue of the low position of the thrust line relative to the level of the pilot's eyes. Behind the seats, and within easy reach of them, is the luggage space, which is of considerable size.

The cantilever wing is a one-piece structure, consisting of two main box spars, light ribs, and a plywood planking. It is attached to the fuselage by four bolts only. The wing section is of the bi-convex class, with nearly stationary centre of pressure. The ailerons are of large span but small chord.

An undercarriage of the simple "split" type is fitted, and the track seems a little narrow for the wing span. The tail skid is swivelling, rubber cords being used for springing and also to limit the directional movement of the skid.

The Salmson A.D.9 engine is mounted on a welded steel tube engine bearer attached to the fuselage by four bolts, and separated from the cabin by a fireproof bulkhead. Petrol is carried in two tanks in the wing, the standard capacity being 60 litres (13.2 gall.). For his flight to

Madagascar M. Lefevre had large tanks installed in the cabin so as to increase the range to 1,500 km. (930 miles). As the normal tankage is 13 gall. and the average consumption at a cruising speed of 75 m.p.h. is about 2 $\frac{3}{4}$ -3 gall. per hr., the machine has a still-air range of about 330 miles.

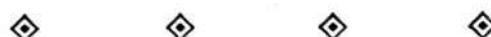
The standard type M.11 has a tare weight of 320 kg. (700 lb.), and as its permissible gross weight is 550 kg. (1,210 lb.), the disposable load is 510 lb. This may normally be made up as follows:—Pilot and passenger, 350 lb. ; petrol and oil, 100 lb. ; luggage, mails or other pay load, 60 lb.

The main overall dimensions are shown on the general arrangement drawings. The length is 18 ft.; the wing span 38 ft. 6 in., and the wing area 159 sq. ft. Thus the wing loading is 7.6 lb./sq. ft. and the power loading (on 40 h.p.) 30 lb./h.p. This is a fairly high power loading, but normally the machine is not loaded up to its maximum permissible gross weight and the loading is slightly reduced.

The performance of the Mauboussin M.11 is not spectacular, naturally. With such loadings one would not expect it to be. The maximum speed is, however, about 93 m.p.h., which gives an Everling "High-speed Figure" of 21.3, a value which indicates that the minimum drag coefficient is low. The cruising speed is approximately 75-80 m.p.h., and the landing speed is given as 40 m.p.h.

By his flight Lefevre demonstrated that the machine is certainly capable of something more than flying around above an aerodrome in spite of the relatively low cruising speed. The machine should be very economical to run, as the fuel consumption is rather less than 3 gall. per hr. at nearly 80 m.p.h., so that the mileage per gall. is in the neighbourhood of 26. If the cost is divided between the two occupants this must be regarded as cheap touring.

The service ceiling of the M.11 is about 14,750 ft., which altitude is reached in 50 min. The first 3,000 ft. takes about 7 min.



THE KING'S CUP, 1932

THE Royal Aero Club has issued the following preliminary announcement regarding this year's King's Cup Air Race, which will take place during the early part of July—the exact date to be announced later:—

Organisation.—The race will be conducted by the Royal Aero Club under the Regulations of the F.A.I. and the Competition Rules of the Royal Aero Club.

Competitors.—The entrant and pilot or pilots or passengers must be British subjects. The entrant must be an individual and not a company.

Pilots.—Pilots taking part must have flown solo for at least 100 hours prior to the final closing date of entries, May 1, 1932.

Aircraft.—The race is open to any type of *bona-fide* civil aircraft. The aircraft, including the engine and the engine accessories, must have been entirely constructed in the British Empire. For the purposes of the race, a *bona-fide* civil aircraft is an aircraft which was originally designed, and subsequently constructed, for use in civil aviation activities.

In any question regarding the eligibility of any aircraft, the decision of the Royal Aero Club shall be final.

Where a passenger is carried, dual control (if any) must be disconnected.

Course.—The course will be approximately 1,250 miles, and will be announced later.

The course will be divided into two sections, to be

completed on two consecutive days. The first section will be approximately 750 miles, starting and finishing in London. The second section will be approximately 500 miles, starting and finishing in London.

Handicap.—The aircraft will be handicapped for the complete course of approximately 1,250 miles, according to estimated performances, and a proportion of the total handicap will be allotted to each section. The minimum speed at which aircraft will be handicapped will be 110 miles per hour.

The 50 competitors making the best handicap performance in the first section will be allowed to continue the race in the second and final section, the remainder being eliminated.

Entries.—The entry fee is £10. This fee must be paid to the Royal Aero Club, 119, Piccadilly, London, W.1, not later than 5 p.m. on April 1, 1932. Late entries at double entry fee will be received up to 5 p.m. on May 1, 1932.

The entry form, complete with all particulars, must be received by the Royal Aero Club, 119, Piccadilly, London, W.1, not later than 5 p.m. on May 1, 1932.

The regulations governing this year's race for the King's Cup differ materially from those of previous races, and on the whole they must be said to mark a distinct improvement. Instead of restricting the race to amateur pilots,

as was done last year, the number of competitors is limited to 50 in the second section, and thus undue crowding at controls should be avoided, as it is towards the end of a race that competitors begin to "bunch up," at any rate if the handicapping is good. If 100 machines start in the race, as may well be the case, it will be very hard luck on the 50 who, by doing badly on handicap, are eliminated and prevented from competing over the second section; but if downright dangerous racing is to be avoided it seems rather necessary to limit in some way the number of competitors.

It will be noted that on both days of the race competitors return to London. This must of necessity mean that certain towns in the North which were visited last year will have to be left out, which seems rather a pity, as it should be the aim of the race to afford as many people as possible an opportunity to see the machines. But possibly a sufficient number of controls can be found within a shorter distance of London to provide as many controls as previously.

From the organisers' point of view the return to London each day will facilitate matters somewhat. On the first day the distance to be flown is 750 miles, and on the second 500 miles, so that with machines handicapped at not less than 110 m.p.h. each day's section should not take an uncomfortably long time.



VICEROY'S CUP AIR RACE

THE Excellencies the Viceroy of India and the Countess of Willingdon have very generously offered to present a Challenge Cup to be known as the Viceroy's Cup for an annual aeroplane race for pilots trained by flying clubs in India or elsewhere on much the same lines as the King's Cup in England. A Racing Committee has been appointed by the Aero Club of India and Burma to arrange the details, which will be announced later.

The underlying idea of the race is to encourage the sporting side of flying, and it is anticipated that there will be a large number of entries. Substantial cash prizes will be given in addition to the Cup.

It is proposed to hold the first race starting from New Delhi on the day before the Annual Conference of repre-

sentatives from flying clubs, which has been fixed for February 21.

The race will probably be over a triangular course of some 600 to 700 miles. The race is open to all Indian pilots and all others holding an "A" licence, but excluding "B" licence holders, who have been trained by flying clubs either in India or elsewhere.

It is hoped that the number of entries for the first race will reflect the appreciation of Their Excellencies' generosity in encouraging the sporting side of flying, and by the gift of this Cup the Aero Club contemplate that the race will assume an importance equal to that of the King's Cup in England. Further details of the race will be issued by the Aero Club later.



THE NATIONAL AIRCRAFT SHOW, DETROIT

THE aircraft industry of the United States is making preliminary preparations for the National Aircraft Show of 1932, scheduled to be held in Detroit next April 2 to 10. Like last year, the exposition will take place in the world's largest aeroplane hangar, located on Detroit City Airport.

The Show, it has been announced, will be sponsored by the Aeronautical Chamber of Commerce of America, Inc., national trade association of the industry, with the special co-operation of the Aircraft Bureau, Detroit Board of Commerce.

Both organisations co-sponsored the 1931 exhibition, which is nationally regarded as the most successful event of its kind yet held in the United States. Active arrangement of the show has been vested in Ray Cooper, who has managed all aircraft shows in Detroit since 1928. Supervisory arrangements will be made by a Board of Control of five members, consisting of George S. Wheat, vice-president, United Aircraft and Transport Corporation; Charles S. (Casey) Jones, vice-president, Curtiss-Wright Corporation; Luther K. Bell, general manager of the Chamber; William B. Mayo, chief engineer, Ford Motor Company; and Edward G. Macauley, manager of the aviation division, Packard Motor Car Company. Mr. Wheat is a member of the Chamber's Executive Committee. Mr. Mayo is a member of the Chamber's Show Committee, as well as being president of the Detroit organisation's Aircraft Bureau.

The building in which the industry will display its products is a gigantic structure, measuring 1,000 ft. in length and 200 ft. in width, contains 200,000 sq. ft. of floor

space, and cost \$1,200,000 to erect. It is, of course, located on Detroit City Airport, which makes it possible for exhibitors to land their planes at the airport, and wheel them into their allotted exhibition space inside, avoiding the usual expense of dis-assembling and trucking through city streets. This arrangement also makes it possible for models of the planes displayed to be demonstrated in flight to the public.

It is expected that a number of American planes which established records in 1931 will be on display, including possibly the "Winnie Mae," which was flown around the world by pilots Post and Gatty in eight days and fifteen hours. Major Doolittle's Laird biplane, which holds the transcontinental record and recently flew over 2,400 miles from Ottawa, Canada, to Mexico City in a lapsed time of 12 hours, is also expected to be on exhibition, as well as the "Gee Bee," in which Lowell Bayles won the 1931 Thompson Trophy race at Detroit, and recently attained an unofficial and non-diving speed of 307 miles an hour. Among other exhibits programmed are: Several Ford trimotored planes of the type holding the speed-load record; the Diesel-powered "Bellanca," which holds the non-refuelling duration record; and the "Cape Cod," which flew the 5,014 miles from New York to Istanbul. This show, it is anticipated, will be one of the most interesting and significant of any to date. There will be an international day devoted to the reception and entertainment of visitors from overseas who are interested in the latest developments in commercial aircraft. These visitors are invited to a preview of the exhibition, which is not open to the general public.

Roberts' Aeroplane Stabiliser

STABILISATION or automatic control of aircraft is a subject which has exercised the minds of large numbers of designers and inventors ever since aircraft flew sufficiently to need controls at all. So many patents have been taken out covering various forms of automatic control that one could write a history on that subject alone. Such a state of affairs does not, however, mean that someone will not come along with a comparatively simple idea which works far better than all the previous inventions.

The Stabiliser, or Control, which Mr. Roberts has recently designed and fitted in a "Moth," and which we describe here, is not yet perfect; in fact, it is certainly still in its experimental stage, but its promise is so great that it would be idle to imagine that it will not be further improved both in detail design and in its application.

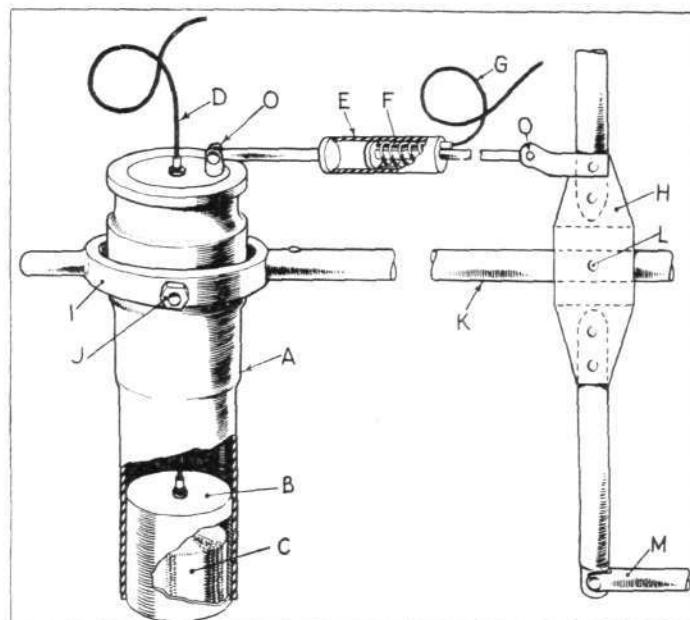
As at present fitted, it quite adequately maintains the "Moth" on an even keel laterally during straight flights or in gentle turns without there being the slightest necessity for the pilot to touch the control column at all. This is just the same whether the weather is bumpy or not. Turns can also be made solely by use of the rudder, provided this is used with discretion so that the rate of turn is such that the elevator is not really needed. Immediately rudder is applied the aircraft assumes its correct bank, and we found that by easing the rudder slightly the turn could be maintained at a steady rate without losing height appreciably. For faster turns it is necessary to alter the tail-trimming gear, as this has the effect of applying more elevator. Unless this is done, of course, the aircraft gradually, according to the amount of rudder applied, drops its nose while the centrifugal force appears to increase the bank, thus bringing the aircraft into a steep diving turn.

As already explained, in straight flight a bump causing a wing to drop is at once counteracted by the application of the correct aileron. This means that if, for example, the tail-trimming gear has been set so that the aircraft climbs steadily, climbs may be made through cloud with complete safety without touching the control column. It will naturally be necessary to have a turn indicator as means of keeping a straight course, while the revolution counter and altimeter would be used all the time to check the fact that a steady climb was being maintained.

Many other advantages have been claimed for this simple piece of apparatus by pilots who have flown it recently, but until we have tested it more fully we should hesitate to repeat all that we have heard. A consensus of opinion would, however, point to the fact that whatever the position of the aircraft may be, it will immediately, providing the tail-trimming gear has been set correctly, assume normal flying position if the control column is let go free. In a spin it does not appear to make much difference, but in coming out, all that is required is to let go the column and apply a little opposite rudder. When nearly stalled, there appears far less tendency to drop a wing than is normal with this type of aircraft, and this can only be accounted for by assuming that the mechanism acts far faster and in a more correct manner than does any human pilot.

The invention is, of course, protected all over the world,

and is being handled over here by Mr. Roberts and Mr. Young, working together as the Roberts Aeroplane Stabiliser, Ltd., New Zealand House, 415, Strand, London. Both these gentlemen are New Zealanders, and it speaks



A diagrammatic sketch of the Roberts Stabiliser as at present fitted for its first trials in the air.

well for their patriotism that they should first bring their remarkable invention to this country to develop. They are employing Mr. Kay as their test pilot.

The diagrammatic sketch will explain the main features. "A" is a cylinder in which slides a wrought-iron container "B." This container is nearly full of mercury, and its height in "A" may be varied by the Bowden control "D." "A" is hung in a gimbal ring "I," and pivots on the pin bearings "J," the gimbal ring being part of the torque shaft "K," which connects, forward to the dual-control mechanism and aft to the aileron operating gear. The control column "H," of course, pivots in a fore and aft direction on the bearing "L," thus working the elevators in the normal way through the rod "M."

"O" and "O" are two joints, one on top of the cylinder "A" and the other on the control column "H," between them is the piston "F," which is free to slide in the small cylinder "E." This piston works against a spring, which may in turn be compressed by the Bowden control "G." On examination it will be seen that automatic lateral control is obtained when the mercury is lowered to the bottom of "A." In this case the gravitational force will act on this weight in such a manner that the aircraft will tend to turn about it laterally. Should it do so, then the weight will exert a force which will at once lower the aileron on the

(Concluded on p. 59.)



A view of the Roberts Stabiliser in the cockpit of the Moth. Its compactness and simplicity should be noted.

Private Flying & Gliding

S TAG LANE STEPS LIGHTLY

Members of the London Aeroplane Club showed their contempt for all the pessimists last Saturday evening by having at Stag Lane a dance at their club. In times of stress and depression it has almost become proverbial in England to sit back and moan or grouse, but like most flying people the members of the London Aeroplane Club are more "Kruschen-like" than folk connected with older trades, and they don't take things lying down so readily. This was the first occasion we had had the pleasure of attending one of the Club's dances, and we were certainly struck with the, if we may say so, sensible gaiety of the evening. It was not the pointless abandon of the American in Paris *after* he had won the war, nor the irresponsible horse-play of that obsolescent section of society known as "Bright Young Things," who, by the way, have always seemed to us intolerably dull; but it brimmed over with sheer, out and out, exuberant good spirits.

If you don't believe it go and see them playing, or, we ought to say, dancing "musical chairs." You'll then soon lose any despondency you may have about the state of the country. It wasn't much of a celebrity show either, for it was mostly just the club members themselves, although several well-known personalities not directly connected with the club were seen during the evening.

The "fruit" machines, of course, did good trade, and it was amusing to hear that the construction of one of them, at any rate, foiled the most persistent attentions of a burglar who got in through a window and tried all he knew to get the "Jack pot." But he had no more luck than any of the others we saw who used shillings instead of the elaborate outfit that professional "Raffles" appeared to have used.

Mr. Phillip Wills obviously enjoyed himself directing operations on many occasions, especially in instituting such lotteries as the "Paul Jones," a dance which always

seems to us rather like marriage, for you never know what you are going to get till you've got it—and then it's too late to alter things till the music changes! Mr. Wills has, we hear, now taken over his father's shipping business, he and his wife having just returned from a visit to Australia.

Mr. Stuart King was home from Kenya, as also was Miss Homedavis, while Mr. and Mrs. H. B. Hinton found that alcohol, though harder to get over here than in their "dry" home across the Atlantic, was certainly better value. Maj. Travers and Mr. Spencer, Chief Instructor and Assistant Secretary respectively of the Club, made it their business to see that nothing flagged, and while the former organised syndicates to ensure that if "Raffles" paid another visit he would find a good full "Jack Pot" awaiting him, the latter saw to it that the Terpischorean devotees did not lack partners. In this he was helped wholeheartedly by Mr. Tangye, the Assistant Instructor, a comparatively new member and one of the latest of the Senior Service to take up civil flying instruction upon his retirement.

The new club-house lends itself well to these functions, having some three times the floor space of the old one. What was at one time the dining room is now a lounge wherein Maj. Travers chased the very retiring "Bell-Fruit-Gum," whilst the new large dining room was used for dancing. It was in here, therefore, that Mr. Harris and Mr. G. H. Craig nobly worked the drum and piano to the limit, while others reaped the benefit of their labours with some rapid footwork. The new lounge was given over to refreshments, where sandwiches (filled with everything from "passion fruit" to "tinned dog," as we are told) could be had for the taking. Altogether it was a real good show and well worth the visit, even if we did have to wade through much mud to get there. As we took a lot of the latter away on our tyres, it should be drier on the next occasion!

BROOKLANDS AERO CLUB

Weather conditions have been particularly bad lately, but several pupils have very satisfactorily progressed. Mr. Kristian Haldorsen has completed the tests for his "A" licence. Mr. T. R. Forrest has gone solo and Mr. Rowse is just about to do so. Mr. Pawson, a 17-year-old schoolboy, is trying to get his "A" licence during his holidays, while another member, Mr. J. G. Hayes, has brought his brother over from Ireland to learn to fly. In FLIGHT last week we published a picture of the new Brooklands club-house. We are informed that the wording may be somewhat misleading. The facts are that Mr. Graham Dawbarn, who was the architect for alterations carried out at Heston, is also the architect for this club-house, but it is pointed out to us that the Brooklands Aero Club is not in any way connected with Airwork, Ltd.

BLACKPOOL AND FYLDE GLIDING CLUB

This club has now been running over one year and has some 90 members. Mr. C. B. Harris is the Captain of the club and Mr. J. W. Whittaker the Secretary. Mr. Harris is an old hand at flying, as he was actually a pilot before the war, and flew the *Daily Mail* glider some six years ago in the Isle of Wight. The club is in a strong position and has that desirable factor, a preponderance of really keen members. They therefore have no difficulty about crews to launch the machines and haul them back again on every day when flying is possible.

THE TREWINNARD FLYING CLUB

This club was mentioned in FLIGHT for December 25 and is being run on the lines of a country club at Trewnnard Manor, St. Erth. The house, which is as old as the Doomsday Book, is complete with a family ghost, secret passage and a rumour of hidden treasure. The club will be run in conjunction with a flying school and the house will include lecture rooms, dining room, sleeping accommodation, tennis courts, badminton, squash rackets, minia-

ture golf, bowls, billiards, facilities for clay pigeon shooting, a swimming pool, Turkish baths, and, in fact, everything one can want. The subscription will be £4 4s. annually and there is no entrance fee until after the official opening, which it is hoped will take place at Easter or the early summer. Those who wish for further information should apply to the Hon. Secretary, Miss Carola Courtney B. Boucher, or to the Hon. Treasurer, Mr. William Hornby, Treliwick, Hayle, Cornwall.

IRELAND SEES IT THROUGH

Dublin is noted for the gaiety of its social events, but undoubtedly the most successful of this season was the Irish Aero Club's dance at the Royal Hibernian Hotel on New Year's Eve. Nearly 400 guests were present, and at midnight sped the parting year in the traditional manner.

The success of the dance was largely due to the energetic efforts of the Dance Committee, of which Miss Doreen O'Hara was the capable secretary.

The attendance included: The Lord Mayor of Dublin (Ald. A. Byrne) and Lady Mayoress; Mr. P. McGilligan, T.D. (Minister for Industry and Commerce) and Mrs. McGilligan; Mr. O. Grattan Esmonde, T.D. (Chairman); Mr. Oliver E. Simmonds, M.P.; Capt. J. P. Saul; Mr. A. P. Reynolds (Hon. Secretary) and Mrs. Reynolds; Mr. and Mrs. W. R. Elliott; Maj. S. Dunkley; Capt. E. G. Stewart, M.C.; Maj. Harbord; Capt. Bookley; Dr. G. E. Pepper; Mr. J. Doyle, B.Sc.; Miss S. Trench; Mr. L. J. Stanton; Mr. S. Murphy; Mr. A. C. Woods; Miss M. Woods; Mr. M. G. A. Scally; Mr. C. F. French; Miss Joyce; the Misses Campbell; Mr. St. John Kearney; Mr. P. Grimes and Mr. E. F. MacSweeney.

CANADIAN FLYING CLUBS

Very satisfactory progress has, on the whole, been made by the Canadian flying clubs during the past year. An interesting summary of their activities for the period

CANADIAN LIGHT AEROPLANE CLUBS
SUMMARY FOR NINE MONTHS ENDING SEPTEMBER 30, 1931

Club.	Members	Aircraft	No. Under Instruction	Soloists	Hours Flown	Licences obtained	
						Private	Com- mer- cial
Aero Club of B.C.	84	3	22	13	425.55	6	7
Brandon Aero Club	226	2	26	9	311.18	6	2
Brant and Norfolk Aero Club	150	2	31	5	220.00	5	1
Border Cities Aero Club	130	3	25	14	513.55	12	5
Cape Breton Aero Club	37	2	5	8	244.30	4	1
Calgary Aero Club	128			No Flying	31	1	
Edmonton and N. Alta	132	5	30	25	1,040.35	59	5
Fort William Aero Club	180	4	4	2	192.45	19	8
Halifax Aero Club	110	2	10	10	445.45	6	3
Hamilton Aero Club	118	4	44	40	396.30	19	10
Kingston Flying Club	68	2	5	19	454.30	10	3
Kitchener Waterloo Aero Club	75	2	10	6	200.00	4	2
London Flying Club	184	4	32	6	336.00	17	6
McGill Light Aeroplane Club	30	1	5	2	27.35	—	—
Montreal Light Aero Club	170	5	30	65	1,024.20	44	11
Moose Jaw Flying Club	145	3	18	15	283.20	35	11
Ottawa Flying Club	143	4	18	21	200.00	34	17
Regina Flying Club	93	4	48	50	387.30	32	16
Saskatoon Aero Club	44	3	26	46	404.13	38	6
St. John Flying Club	71	2	43	17	150.00	9	1
St. Catharine's Flying Club	54	2	16	35	330.05	18	6
Toronto Flying Club	318	5	28	33	860.55	34	22
Winnipeg Flying Club	181	3	22	22	584.30	53	14
Totals for 1931, nine months	2,871	67	498	463	9,054.11	495	158
Totals for 1930	3,643	70	703	443	14,686.44	—	—
Totals for 1929	5,233	65	904	—	16,612.50	—	—
Totals for 1928	2,403	34	598	—	8,124.30	—	—
Totals to date	—	—	—	—	48,476.15	—	—

January 1 to September 30 of last year will be found in the accompanying table, recently issued by the Civil Aviation Branch of the Department of National Defence, Canada.

THE EASTERN COUNTIES AERO CLUB

Owing to the success of the first dance of the Eastern Counties Aero Club it has been arranged for another one to be held at the Red Lion Hotel, Colchester, on Thursday, January 21, from 8 p.m. to 1.30 a.m. Tickets for this function are available for non-members in order that a large-sized gathering may be ensured, and those wishing to come are particularly asked to book their tickets as early as possible in order that the Committee may facilitate the arrangements. Tickets are obtainable in the first place from the Secretary, Municipal Aerodrome, Ipswich (Ipswich 3294); or the Hon. Branch Secretary, Station Garage, Colchester (Colchester 3800); or the Aerodrome Manager, Blue Barns Aerodrome, Ardleigh, Colchester (Ardleigh 51), at a cost of 7s. 6d. single, or 10s. double, including supper.

THE SAILPLANE AND GLIDER

As our readers know, this is the official organ of the British Gliding Association, and it appears this month in its new form with a coloured cover and Mr. F. Entwistle as Editor. It is exceptionally well got up and besides club news has many interesting articles. There is one on hill soaring by "Ventigern," and a semi-technical article translated from our German contemporary *Flugsport*, on "The Birds' Wing as a Basis for the Theory of the Z Wing." Mr. Wolf Hirth, whom it will be remembered recently lectured in this country on his return from America, also discusses the problems of auto-towed launching.

THE BRITISH GLIDING ASSOCIATION

The annual General Meeting will be held in the library of the Royal Aeronautical Society, 7, Albemarle Street, London, S.W.1, on Monday, February 22, at 7.30 p.m. The business will include the election to the council of ten representatives of the founder, original and life members. Nominations signed by two members and the candidate himself must be received by January 25.



GLIDING IN JAPAN: The first Japanese-built high-performance soarer, "Yamazaki," designed and constructed in Tokio by Yoshio Yamazaki, who is seen on the extreme right in the first picture.

Air Transport

CIVIL AVIATION IN CANADA

INCLUDED in the report, for the quarter ending September 30, 1931, issued by the Civil Aviation Branch of the Department of National Defence, Canada, are the following statistics concerning Air Mail services, etc.

During the period July 1 to September 30 the licences issued were:—41 private, 39 commercial, and 41 air engineers; 39 aircraft were registered and 4 air ports licensed. This brings the total in force at September 30, 1931, to:—Private pilots, 271. Commercial pilots, 393. Air engineers, 406. Aircraft, 489. Air ports, 75.

Owing to general economic conditions the following services were withdrawn until further notice:—

May 9.—Lac-du-Bonnet—Bisset—Wadhope.

June 1.—Montreal—St. John—Moncton (Experimental Service).

June 1.—Toronto—Buffalo (one way only).

June 1.—Montreal—Ottawa (Summer Service only).

August 15.—Regina—Edmonton, superseded by Winnipeg—Edmonton.

August 15.—Winnipeg—Calgary, superseded by Winnipeg—Edmonton.

August 16.—Montreal—Detroit, superseded by Toronto—Detroit.

The weights of mail carried by air over the various air-mail routes in operation during the same period are shown in the following table:—

		July	August	September
Amos—Chibougamau	...	128	137	79
Amos—Siscoe	...	963	1,164	1,216
Montreal—Albany	...	1,411	1,513	1,550
Montreal—Detroit	...	6,245	3,472	
Montreal—Rimouski	...	7,281	11,074	6,941
Narrow Lake—Sioux Lookout	...	3,004	2,995	3,304
Regina—Edmonton	...	1,762	935	—
Winnipeg—Calgary	...	4,562	5,602	—
Winnipeg—Pembina	...	2,170	2,112	1,956
Winnipeg—Edmonton	...	—	2,875	5,685
Toronto—Detroit	...	—	1,303	2,258
Halifax—Boston	...	—	88	
Vancouver—Victoria	...	—	388	54
McKenzie River	...	4,987	5,467	5,686
Special Flights	...	266	395	51
		32,779	39,520	28,780

The total mail carried for the quarter was 101,079 lb., and for the nine months to September 30, 1931, 400,075 lb.

General statistics for the Canadian Air Mail Services are given in the accompanying table:—

CANADIAN AIR MAIL SERVICES. FROM JULY 1 TO SEPTEMBER 30, 1931

Operator	Route	Pilots	Aircraft	Hours	Miles Flown	Paying Passengers	Express (lb.)	Passenger-Miles	Efficiency, per cent.
Canadian Airways, Ltd. Eastern Lines	Montreal—Detroit...	4	4	615.00	63,294	171	—	39,061	99.5
Canadian Airways, Ltd. Western Lines	Trans—Prairie ..	12	12	2,004.50	197,684	404	95	195,840	97.975
	Pembina ..	1	2	129.55	13,156	191	—	9,229	100
	Mackenzie River ..	4	5	282.00	28,199	—	—	—	100.00
	Narrow Lake—Sioux Lookout	2	2	83.30	7,564	—	—	—	100.00
Canadian Trans-continental Airways, Ltd.	Montreal—Rimouski	2	2	113.00	12,870	3	52	990	88.06
Canadian Colonial Airways, Ltd.	Montreal—Albany...	3	3	154.55	15,570	155	—	31,000	98.5
	Total	28	30	3,383.10	338,337	924	147	276,120	—
Total for nine months	—	—	—	12,667.42	1,245,387	3,389	121,847	550,452	—

Wireless Direction Service for Canadian Air Mails

THE Dominion Department of National Defence has installed at Red Deer, Alberta, a radio directional system for aeroplanes carrying mail. The new station is the fifth of its kind established along the air mail route in Western Canada, and the complete service for blind or night flying is now functioning along the whole of the route between Winnipeg via Lethbridge to Calgary, as well as from Calgary to Edmonton. The station at Red Deer guides planes flying between Calgary and Edmonton, while the remainder of the route is covered by stations at Lethbridge, Alberta, Maple Creek and Regina in Saskatchewan, and Forrest, Manitoba. While primarily intended for the guidance of mail planes, any plane equipped with either of the two types of apparatus used in picking up the beam from the station, may make use of the service. Radio direction, besides being especially useful for night flying,

is also of vital importance during foggy weather, or during snow, rain or wind storms. A teletype equipment has also been run into the new station, and is hooked up with Edmonton, Calgary, Medicine Hat, Lethbridge, Maple Creek, Moose Jaw, Brandon, Regina and Winnipeg. The device enables the station to receive and utilise weather reports from the points mentioned. Weather conditions along the route are sent out by the station every 15 min., and additional information of this sort can be sent to the pilot on demand.

The Cape Air Mail

As recorded last week, the first regular through air mail service from England to Capetown starts from Croydon on January 20. The Postmaster-General announces the following combined postage and air fees for correspondence other than parcels for this service:—Northern and Southern Rhodesia, 9d. per first $\frac{1}{2}$ oz. and



THE CAPE AIR MAIL: Imperial Airways D.H. "Hercules," *City of Karachi*, arriving at Capetown on December 21 with the special Xmas air mail direct from England. The mail left Croydon on December 9.

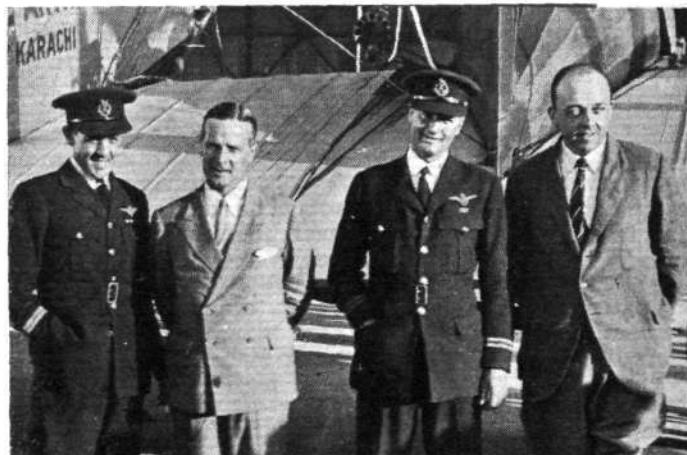
8d. each additional $\frac{1}{2}$ oz.; South Africa and South West Africa, 1s. per $\frac{1}{2}$ oz. Uninsured parcels may also be sent by this service to the Sudan and countries beyond at the following rates per lb. up to maximum of 11 lb.:—Sudan, 4s. 6d.; Kenya, Uganda, Tanganyika, Zanzibar, 6s.; Northern and Southern Rhodesia, South Africa, 7s.; South West Africa, 8s. The latest time for posting letters in the air mail box at the General Post Office, London, will be 11 a.m. on Wednesdays and correspondingly earlier elsewhere. The latest time for posting parcels at the General Post Office, London, will be 9 p.m. on Tuesdays.

Mr. F. G. L. Bertram, Deputy Director of Civil Aviation, and Air Vice-Marshal Sir Vyell Vyvyan, one of the directors of Imperial Airways, will travel by the first mail, due to reach Capetown on Sunday, January 31, and will begin the homeward journey in the first machine to leave Capetown for London with a mail load. They will alight for a week's stay at Pretoria and will subsequently spend a week at Nairobi and another at Cairo. It is the wish of the Air Ministry, and of Imperial Airways, that the opportunity for direct consultation shall be afforded to the Governments which have assisted, either by subsidy or by equipping the route, in the establishment of the service. These two representatives hope to discuss various administrative matters with the authorities along the route.

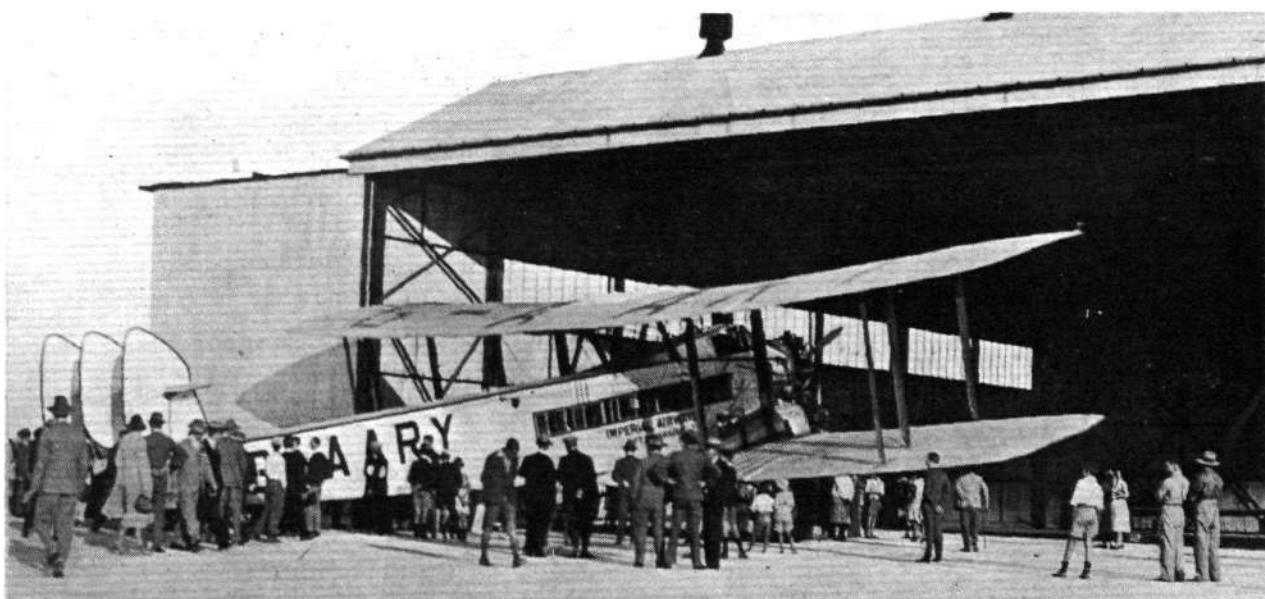
Australian "Xmas Air Mail"

IMPOSSIBLE weather held up Air Commodore Kingsford Smith at Hamble until January 7, when—shortly after 8 a.m.—he was able, at last, to set out for Australia in the Avro 10 *Southern Star*. He reached Marseilles, after a short stop at Le Bourget, the same evening. Naples was reached the following morning, and Rome in the afternoon, the trip from Marseilles being accomplished in

3 hr. 40 min. On January 9 he left Rome at 7.20 a.m. (local time) and arrived at Athens at 3 p.m. (local time). Aleppo was reached next day (January 10), and by January 12 the *Southern Star* had passed over Karachi on its way to Jodhpur.



THE CAPE AIR MAIL: Group taken at Capetown on the arrival of the *City of Karachi*. From left to right—Capt. R. F. Caspareuthus (who made a record flight to the Cape in 1930), Maj. H. G. Brackley (Imperial Airways Superintendent), Capt. H. Alger (Chief Pilot), and Flt.-Lt. R. Durrant (Air Ministry Wireless Officer).



THE CAPE AIR MAIL: The *City of Karachi* being docked at Capetown at the conclusion of the first (experimental) through air mail service from England.

Correspondence

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.

DR. ECKENER AND BRITISH AIRSHIPS

[2787] We have received from Dr. Hugo Eckener, of the Zeppelin Company, the following letter referring to our Editorial Comment in the issue of FLIGHT of December 18, 1931:—

Mit grossem Vergnügen habe ich Ihren Artikel im Novemberheft des FLIGHT gelesen. Ich freue mich ausserordentlich, in diesem Artikel zu lesen, dass Sie es für unrichtig halten würden, wenn England sich vollständig von den Luftschiffen abkehren wollte, nachdem es so viel in die Entwicklung des Luftschiffes investiert hat. Aber ich kann nicht dem zustimmen, was Sie über die Beweggründe meines letzten Besuches in England sagen: Es ist zwar sehr schmeichelhaft für mich, wenn Sie mich für einen smarten Geschäftsmann halten, aber meine Beweggründe und Absichten bei meinem letzten Besuch in England waren doch andere, als Sie annehmen, und eigentlich aus Erwägungen geboren, die Ihren eigenen sehr ähnlich sind. Auch ich würde es für sehr bedauerlich halten, wenn England, nachdem es vorerst die Luftschiffe selbst aufgegeben hat, auch seine ausserordentlich wertvollen Anlagen, besonders in Cardington, verfallen lassen oder gar zerstören wollte, und meine Absicht war eigentlich nur die, solches wenn möglich zu verhüten, dadurch, dass ich das Angebot mache oder den Antrag stelle, diese Plätze gelegentlich oder regelmässig benutzen zu können.

Mein Antrag ist selbstverständlich nicht ganz uneigen-nützig, denn unter Umständen könnte der ausgezeichnete Platz in Cardington ein sehr willkommener Nothafen sein, wenn man einmal in schlechtem Wetter von Amerika nach Europa kommt. Andererseits befindet sich aber in einer freundschaftlichen Zusammenarbeit mit Ihren britischen Luftschiffexperten, denen natürlich daran liegt, die Anlagen für eine bessere Zukunft erhalten zu sehen. Es ist mir natürlich nie in den Sinn gekommen, Cardington oder Howden zu kaufen, sondern nur die Möglichkeit einer gelegentlichen Benutzung dieser Plätze in die Wege zu leiten.

Sollte es sich herausstellen, dass es gelingt (und ich hoffe sehr stark auf eine solche Möglichkeit), England in einen deutsch-amerikanischen Luftschiffverkehr mit hineinzubeziehen, so würde sich dann ganz von selbst die weitere Frage ergeben, ob nicht auch wieder englische Luftschiffe für diesen Dienst gebaut werden sollten und diese englischen Luftschiffe müssten dann natürlich in

Cardington gebaut werden. Ich habe natürlich nie daran gedacht, deutsche Luftschiffe in Cardington zu bauen, wie es in englischen Blättern teilweise zu lesen war.

[TRANSLATION.]

It was with great pleasure that I read your article in FLIGHT (of December 18, 1931). I am exceedingly pleased to read in that article that you deem it wrong for England to abandon airships completely after she has invested so much in their development. But I cannot agree with what you say about the motives for my last visit to England. Certainly it is very flattering for me that you take me for a smart business man, but my motives and intentions on my last visit to England were other than you suppose, and were really born of considerations similar to your own. I also would consider it very deplorable if England, after first having given up airships themselves, were to let her valuable organisation, notably at Cardington, go to ruin, or even be destroyed, and my intention was really only that of preventing this if possible, by making an offer to enable these stations to be used occasionally or regularly.

My suggestion is, of course, not entirely unselfish, since the excellent station at Cardington could be used as a very welcome emergency harbour when one arrived in Europe from America in bad weather. Otherwise, however, I am in friendly co-operation with your British airship experts, who are, of course, anxious to retain the plant against better times. It has, of course, never entered my mind to buy Cardington or Howden, but only to prepare the way for the possibility of using these stations occasionally.

Should it so turn out that England should find it possible to join in a German-American airship service (and I very much hope for such a possibility), the further question would automatically arise whether or not English airships should not again be built for this service, and these English airships would then, of course, be built at Cardington. Naturally, I have never thought of building German airships at Cardington, as was partly to be read in English papers.

H. ECKENER.

Luftschiffbau Zeppelin, G.m.b.H.,
Friedrichshafen,
December 31, 1931.



The Air Service Training Blind Flying Trophy

A SILVER model of an Avro Tutor has been presented to Air Service Training, Ltd., by Gale & Polden, Ltd., for competition among pupils at Hamble. It was considered that the Blind Flying Course lent itself best to competition, and the trophy will therefore be won annually by the pupil who, during the past season, has obtained the highest



The Air Service Training Blind Flying Trophy

marks in this course. The marks are awarded for tests in straight and level flying, climbing, gliding, turns with and without engine, taking off, spinning, recovering from awkward positions created by the instructor, in and out, and triangular cross-country flights. The final test consists of a triangular cross-country flight of 70 miles entirely by calculation, without any assistance whatever. An instructor occupies the front cockpit to avoid the possibility of a collision and to trace on a map the actual track followed. The winner of the trophy for 1931 is Mr. Oscar Garden. The runner-up for the trophy was Mr. F. D. Bradbrooke, who was one mark behind the winner and one ahead of the Hon. Lady Bailey, who was third. The importance of blind flying training is now universally recognised and Air Service Training has made provision for this training as a separate course as well as including it in the normal training for all pupils undergoing instruction for their "B" licence.

R.I.B.A. Prizes

AMONGST the prizes awarded by the Royal Institute of British Architects to young architects and students, the Owen Jones Travelling Studentship and £100 (a certificate and £100 for the Study of Ornament and Colour Decoration) has been awarded to "Luds," Mr. Lawrence Wright, B.Arch.Lvpl., A.R.I.B.A., Carlton Vale, N.W. (Liverpool School of Architecture). The subject set was "The Lounge and Bar of a Flying Club."

Airisms from the Four Winds

R.A.F. East African Flight

THE four Fairey III.F machines of No. 14 (Bomber) Squadron, under the command of Flt. Lt. R. L. Atcherley, which are to tour East Africa, left Heliopolis on January 11 and flew to Wadi Halfa. Next day they went on to Khartoum.

An Autogiro Tour

FLT. LT. A. H. C. A. RAWSON, Chief Test Pilot of the Cierva Autogiro Co., Ltd., is making plans at the moment for the first long-distance flight to be carried out on an Autogiro. This he hopes to undertake later in the spring. He plans to make his ultimate destination Tanganyika, flying in easy stages via Catania, Tunis and Cairo, and so on along the regular Cairo-to-Cape route. The Cierva Autogiro Co. are giving this matter their serious consideration at the moment, although nothing definite has been decided.

On Towards Egypt

THE two Avro 10's which Airwork, Ltd., of Heston, are sending out to the Egyptian Government, left Abukir at 8.30 a.m. on January 12. They are piloted by Flt. Lt. Christopher Clarkson, Aviation Manager of Selfridges, and Capt. Dan Cameron. One of the passengers is Capt. Stocks, who is going out to assist Air Commodore A. G. Board, the technical adviser of aviation to the Egyptian Government. Mr. Muntz is going out to Cairo by the sea route, starting in a couple of days' time, with a view to conferring with the Banque Misr as to the final details of the new Société Anonyme Misr-Airwork.

A Fast French Flight.

Two French airmen, Codos and Robida, flying a Breguet with 650 Hispano-Suiza engine, are making a fast flight to French Indo-China. Leaving Marseilles on January 5, Athens was reached in 11½ hr. The next day Aleppo was reached in 6½ hr., and by January 8 the Breguet was at Karachi, having called at Basra on the way. Karachi-Calcutta was flown non-stop in about 10½ hr., which must constitute something of a record. Probably the fact that the Breguet (F-AKEZ) was using

MILAN-MADRID NON-STOP : Sig. Meleri, last December, made a fine non-stop flight from Milan to Madrid, a distance of 930 miles in 7 hr. 18 min.—an average speed of 127 m.p.h.—in the Breda 33 (120-h.p. "Gipsy"). Our upper picture shows him landing at Madrid, while below he is seen (on extreme right) at Lisbon during a subsequent visit standing next to Maj. Pinheiro Correia, Commandant of the Portuguese Independent Bombing Squadron, and L. Monaco, a Director of the Breda Co.



"Shell" spirit had a good deal to do with this rapid progress. In other words, "That's Calcutta that was."

Sir Philip Sassoon's Tour.

SIR PHILIP SASSOON, Under-Secretary of State for Air, is carrying out a tour of inspection of R.A.F. stations in the Near East and India. He arrived at Malta on Tuesday, December 4, 1931, informally, and reached Cairo on December 28. On New Year's Day he left by air for Jerusalem, after having inspected the stations in Egypt. He then flew on to Iraq, and Friday, January 8, left Basra by flying-boat for Karachi. He was to fly via Bahrain and Muscat, following a possibly new route along the Persian Gulf to India.

Lost in the Desert

SQD. LDR. PETER WARBURTON, M.B.E., who is on special duty as Inspector of Iraq Air Forces, set out from Cairo on Friday, January 8 in a "Puss Moth," accompanied by an Army captain, to fly to Baghdad. He lost his way in the desert, ran out of petrol, and had to land some miles south of Rutbah. The two officers were taken charge of by some Beduin tribesmen. When he did not arrive at Baghdad there was great anxiety, and 40 aeroplanes, British and French, set out to scour the desert in search of him. Four days later he was found among the Beduins.

The "Graf Zeppelin"

PLANS for the summer programme of flights by the airship *Graf Zeppelin* are said to have been settled. There will be further flights to Brazil, there may be one into the Arctic, while a suggestion has been made that the airship should visit Sydney in March for the opening of Sydney Harbour bridge.

Franco-German Co-operation

THE aviation section of the Franco-German Economic Committee which was discussing co-operation between the air lines of the two countries, chiefly as regards lines to the Balkans and to South America, has been adjourned until next month, when it will meet again in Paris.



OPERATING THE PUMP ON A VICKERS "VESPA" (JUPITER): The man standing in front of the tail trolley is working the pump.

VICKERS DUPLEX AIR COMPRESSOR

To Give Pressures up to 200 lb. per sq. inch for Engine Starting

THE difficulties and uncertainties encountered in starting the average aero engine by direct cranking are too well known to need elaboration. The trend towards high powers and the inaccessibility of some engines adds to these difficulties.

Starting by means of compressed carburetted air is a great advance over the earlier method, and the use of a motor-driven air compressor (ground equipment) makes engine starting the certainty it should be.

This essential ground equipment is not always available in the case of forced landings, and, in any case, it is advisable to have the aircraft so equipped that it is independent of outside aid, provided this can be done for a reasonable addition of weight.

The Vickers Hand Air Compressor takes over the duties of the motor pump and weighs 9½ lb. It is a very compact unit and can be mounted in any position convenient for operation.

The disposition of the twin cylinders and the mechanical action adopted enables the load on the hand lever to be kept within reasonable limits at all times.

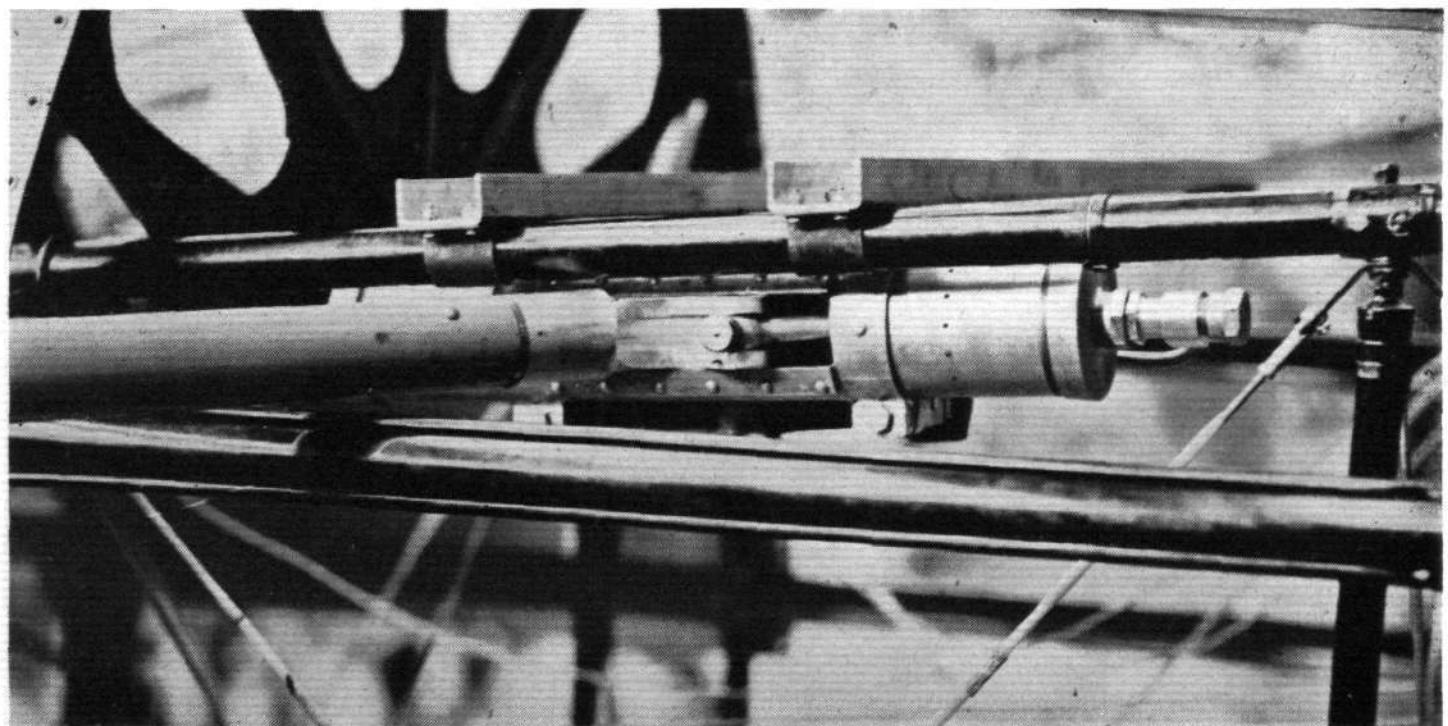
The pump is made throughout from light alloy castings and forgings and has steel cylinder liners so that the initial high efficiency may be maintained.

In order to reduce the number of parts and to secure absolute reliability in action, the usual inlet valves have been replaced by ports cut in the cylinder barrel. These ports are uncovered by the piston at the end of the suction stroke.

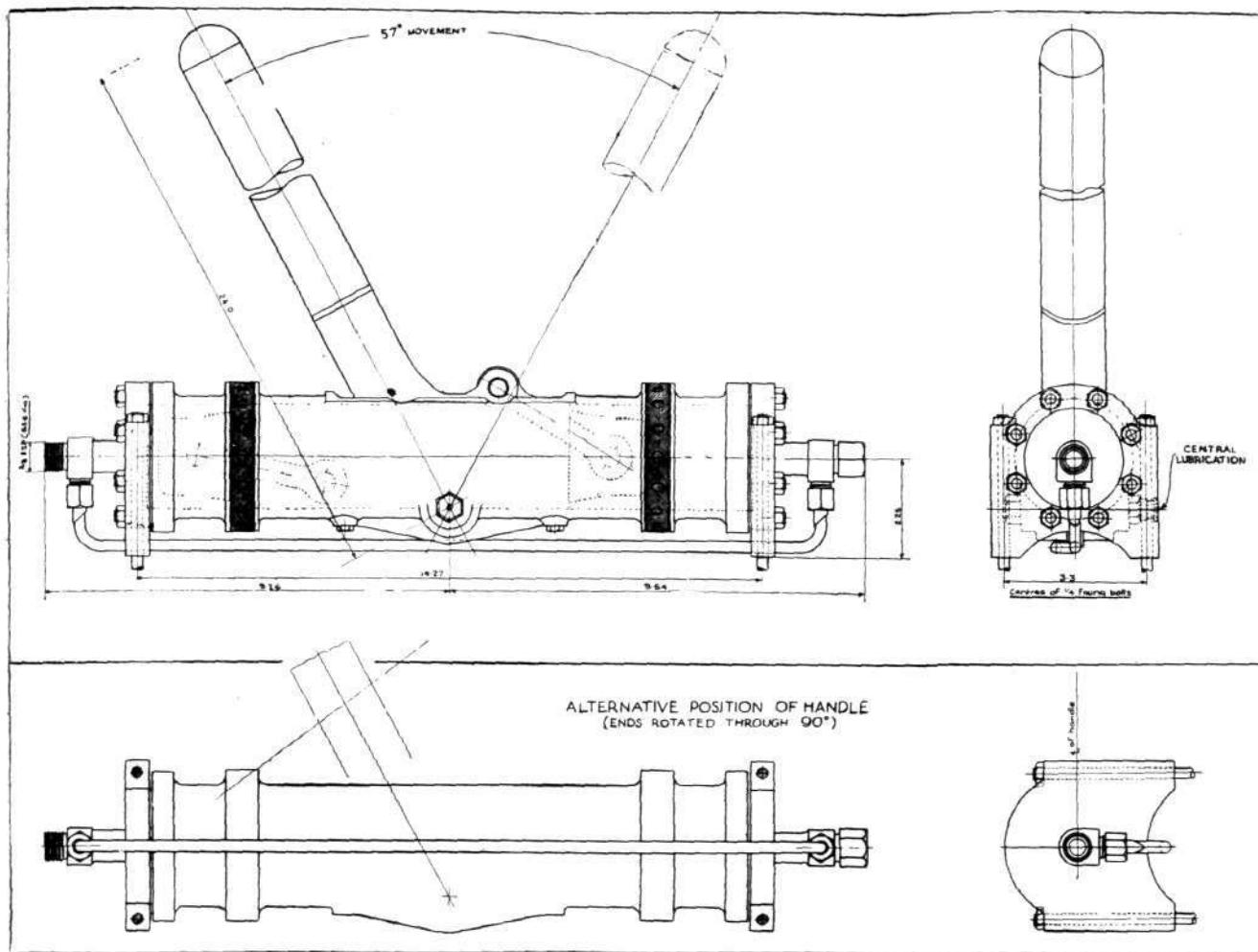
The only valves necessary, therefore, are the discharge valves, which are of the duplex ball type and are mounted in the discharge branch of the end covers.

The provision of two independently operated, in series, discharge valves per cylinder makes for absolute reliability of action.

The lubrication of all the working parts takes place



MOUNTING THE PUMP: This photograph shows the pump mounted on the fuselage of a machine.



OUTLINE DRAWINGS OF VICKERS DUPLEX AIR COMPRESSOR: Alternative positions are provided for the handle.

through the main axis bolt, the crank and connecting rods being suitably drilled.

The inlet ports are protected by gauze covers and the exposed working parts are protected by a canvas cover.

This pump is guaranteed to raise the air pressure in a standard air bottle of 390 cu. in., from 0 to 200 lb. per sq. in., in ten minutes, by two men, working alternately.

When only one man operates the pump, the times are as follows:—100 lb. per sq. in. in 3 to 4 min., and 200 lb. per sq. in. in 12 to 14 min.

An engine of approximately 500 horsepower usually can be started when the pressure reaches 75 lb. per sq. in.; thus, four to five starts should be obtainable with one charge of the air bottle when charged to 200 lb. per sq. in.



ROBERTS' AEROPLANE STABILISER

(Concluded from page 51)

wing which is itself lowered, excluding for the moment the action of differential ailerons, and thus produces a righting moment.

Fore and aft trim can be obtained, as will be seen by the Bowden control "G," as this will have the effect of altering the position of the control column in relation to the vertical. It would appear that acceleration forces would tend to make the aircraft hunt, and to a certain extent we found this to be the case, but this difficulty should be overcome before long. Just what degree of automatic fore and aft control will be obtainable is not yet clear.

Complications arise in a turn, as a balance is obviously struck between the gravitational and the centrifugal forces on the weight, and this seems to be helped in the right direction by the fact that the weight used is mercury, thus ensuring that the C.G. shift is greater, and possibly more rapid, than would be the case with a solid medium.

On test it was really astonishing to note the way in which the aircraft immediately regained level flight if a large amount of top rudder was applied while in a tight turn. The action of raising the weight "B" by the Bowden Control "D" naturally makes the whole mechanism ineffective, but it may at all times be overridden should the pilot wish to do so, so that this may later be found to be unnecessary. We shall watch developments with great interest, for it is simple, light, and should be inexpensive, even this experimental model only weighing about 18½ lb.

B. C.

THE British Corporation Register of Shipping and Aircraft (to be known as the B.C.) have an Aviation Committee, who gave a luncheon at the Royal Aero Club on January 13 to celebrate the issue of their Register of Aircraft (described on page 61). The Chairman is Mr. M. E. Denny, while those others, well known in aviation, serving with him include H. N. St. V. Norman, Sir Alan Cobham, Lt. Col. M. O. Darby, I. H. McClure, H. E. Perrin, W. L. Runciman, Col. the Master of Sempill, Air Com. J. G. Weir, G. E. Woods Humphrey, and Maj. R. H. Mayo. Mr. T. E. Thomas is the secretary, on whom has fallen most of the work of the index. After lunch the Chairman stressed the fact that the B.C. had nothing to do with Lloyd's, who did not issue anything like this new Index. He referred to it as being the only one of its type in the world. Mr. Norman, when called upon, said that the B.C. was the first body to undertake the inspection of aircraft for renewal of C's of A., and they had, he felt, made the whole operation much more simple than hitherto.

A Ground-to-Air Link

THE Automobile Association announces that the Air Ministry has approved the A.A. telephone box at Lockwell Hill, six miles South of Ollerton on the Nottingham Road, as a point at which members may drop messages from aircraft for transmission by the A.A. Air Message Service. Pilots are warned that messages should no longer be dropped at the A.A. telephone box at Ollerton cross-roads on the main road from Newark to Worksop as the heavy increase in traffic has rendered it unsafe to do so. In consequence, therefore, this box has been withdrawn from the Air Message Service Organisation.

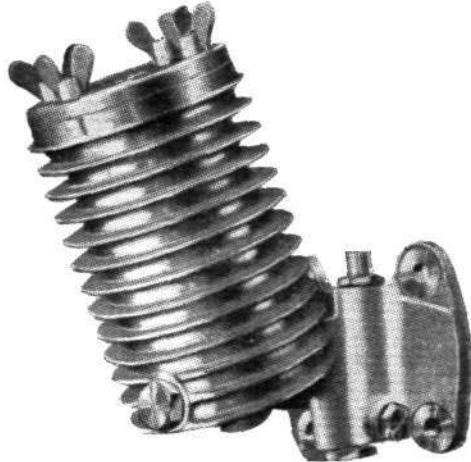
The Industry

"TECALEMIT" AND AIRCRAFT

TECALEMIT, LTD., have recently rendered an extremely valuable service to aircraft by the production of a combined oil cleaner and cooler, which has been found entirely suitable for the arduous work demanded from it in an aircraft engine. It stands to reason that the elimination of dirt, solid matter, small pieces of metal and similar impurities from the lubricating oil before it is passed by the pump back to the engine, will not only effect a great saving of oil but also prolong the life of the engine considerably. This is of particular value in aircraft where the engine is called upon to work under something approaching full throttle for long periods. The filter element through which the oil has to pass is star shaped, and thus provides an extremely large surface area for its overall size. The special felt of which it is constructed is sewn on to a galvanised wire former, and is made of a material which will retain particles of less than 0.04 mm. It can be seen, therefore, that all the non-soluble foreign matter, together with a large portion of colloidal carbon, will be retained in the element. These elements can quite easily be removed and rinsed in petrol, after which they will be ready for further use. The drawing shows a section of a typical cleaner, which has ribs cast on the outside of it to form a large cooling surface. The design of the whole may, of course, be changed according to where it is proposed to place it on the machine and for what engine it is to be used, so that for aircraft engines it can be said that there is no standard design. Similar cleaners are widely used for motor cars and stationary internal-combustion engines, and more particularly for those in use on commercial vehicles. For such as these, a by-pass is fitted enabling the oil to pass through, even if the felt has been left so long that it has become clogged up and will not thus pass the oil. It is an important point, too, that in this system *all* the oil goes through the filter directly it leaves the pump and before it is returned to the engine, thus every particle is cleaned and not only some of it as in many systems. Of particular interest is the increase of oil economy and efficacy in compression-ignition engines, for in

these, owing to the incomplete combustion and high compression used it often happens that half-burnt fuel reaches the crankcase thereby rapidly carbonising the oil; in fact, in some of the industrial compression-ignition engines it is a common sight to see portions of the crankcase caked up solid on opening up. With a Tecalemit cleaner very much longer service can be obtained from these engines, as the cleaner removes almost all the solid matter which would otherwise solidify in the crankcase to the detriment of the oil and the running of the engine. There are at present several prominent aircraft engine manufacturers who are fitting Tecalemit oil cleaners to their new engines, a fact which should show the value of this particular fitting.

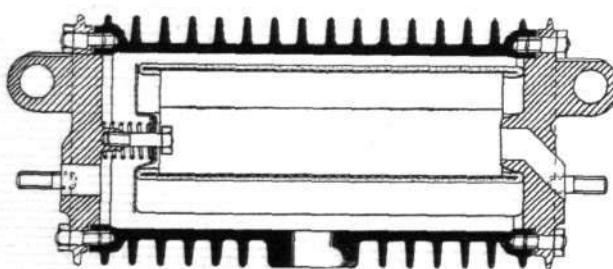
The factory at Brentford, on the Great West Road, does not, however, solely produce cleaners; in fact, the production of that particular product is by no means the most important of their activities. For example, an average month's output would also include 20,000 grease guns of various designs and half-a-million greasing nipples. Tecalemit greasing nipples and systems have been used for lubricating the various moving joints in aircraft for a very long time, and recently the tendency has been to fit modern aircraft with the grouped nipple system. By this method small pipe lines of duralumin tube are laid to all the various parts; these are then led to some easily get-at-able central position, where the grease gun may be operated on duralumin nipples without necessitating clambering about the aircraft. This is particularly advantageous for large flying boats, such as, for example, the *Iris III*, and, moreover, it decreases by a very great deal the length of time required to lubricate all the necessary points. Anyone who is interested in lubrication problems, whether it be for aircraft, motor vehicles or industrial machinery, should, before they select any particular system, pay a visit to the new factory on the Great West Road. What they will see should certainly impress them as to the efficiency of the Tecalemit system. No trouble is spared to make every part fit for its job, and, as an example, we may quote the test which we ourselves carried out on a 6½-in. length of tubing such as is used for the centralised



A typical Tecalemit cleaner arranged nearly vertically, projecting from the crankcase in such a manner that the cast-on fins act as cooling area.

greasing systems on commercial motor vehicles. This piece of tubing had a brass ring sweated on to it at either end, and we were able by means of bars through these rings to twist the tubing completely, eighteen times. After this treatment it was still a tube, and there was no sign of fracture anywhere either in the tube or at the points where it had been silver soldered to the brass rings. Such a test is evidence of the extreme care with which this pipe had been annealed, and tends to show that similar care is taken on every detail throughout the Tecalemit works. Space does not permit us to go into the question of the various types of grease guns, but it is certain that everyone is able to choose a gun to suit their particular work, for a very wide range is made in all shapes and sizes.

A part of the works which is of great interest is the Servicing Department, and here are to be seen all manner of larger greasing plants, such as are now becoming a common sight at every up-to-date garage, and with the increasing use of aircraft we can well imagine that it will not be long before such power-driven systems will be in use at every up-to-date aerodrome. At the Brentford works motor-cars are actually completely greased from radiator to tail as well as having the gear box and back axle flushed out and re-lubricated all in a very few moments. In a similar way, as soon as flying becomes a really big industry, the up-to-date aircraft serving station will have to grease aircraft while the owner waits.



A horizontal Tecalemit cleaner and cooler combined. This form would be suitable for aircraft when it is desired to have the cooler outside the fuselage. The section shows the very large filter surface obtained by the star-shaped filtering element.

A ROYAL APPOINTMENT

A WARRANT of appointment to H.R.H. the Prince of Wales has been issued to C. C. Wakefield & Co., Ltd., lubricating oil manufacturers. This all-British firm has for many years held a similar appointment to His Majesty the King.



The Irvin Pack Back Parachute being worn by a pilot in a Puss Moth (Gipsy III).

PARACHUTE COMFORT

OUR illustration shows the method of adapting the Irvin Pack Back Parachute to the cabin of a "Puss Moth (Gipsy III)." The Pack is worn on the back, thus giving the pilot greater freedom of movement. Exit from the cabin is also made easy with this type. The harness shown is the new Irvin Quick Release pattern.

THE FAIREY AVIATION COMPANY

THE THIRD Ordinary General Meeting of the shareholders of the Fairey Aviation Co., Ltd., was held at Winchester House, Old Broad Street, E.C.2, on December 30.

Mr. C. R. Fairey, M.B.E., F.R.Ae.S., the chairman and managing director, presided. He said that the year's working had been very satisfactory, and the period ending September 30, 1931, showed a profit of £184,584 18s. 5d., including £11,187 4s. 9d. interest on securities and discounts, an increase over the previous year's result of £14,621. This enabled the Company to raise the dividend from 7 to 10 per cent., free of tax, on the ordinary shares. Debenture stock redemption reserve accounted for £22,700, while, instead of further writing down patents and designs, £40,000 was placed to reserve, making a total under this heading of £80,000. The general reserve fund was increased by £30,000 to a total of £60,000, while the total provision for income tax accounts and other claims was now £140,700.

Mr. Fairey said that the continuity of output together with the increased turnover has had a favourable effect on both working economy and overhead charges, so that a reduction in price of the Company's products had been possible.

Of the large overseas orders referred to in last year's report, that for the Greek Government had been completed, and substantial deliveries had

already been made on orders given by the Belgian Government.

The Société Anonyme Avions Fairey had been established at Gosselies, in Belgium, where a small factory was working on a satisfactory basis, and, apart from erection and other work being carried out there, there was an efficient dépôt for repair and maintenance of the Company's products.

The business in metal airscrews was expanding satisfactorily, and airscrews of this type were fitted both to the Schneider Trophy machine and also the S.6b flown by Flt. Lt. Stainforth in winning the World's Speed Record. Mr. Fairey also referred to the long-range monoplane (Napier engine) built by his company, which had already made a successful non-stop flight to Egypt.

The Air Survey Company, a subsidiary of Fairey Aviation, Ltd., showed a small loss on the year's working, but the directors were hopeful that next year should show a profit. Many impending contracts for survey work were, he said, held up owing to the financial crisis, but the prospects were quite good. The Air Survey Company's offices and plant were later being removed to Hayes in order to effect operational economies and closer contact with the parent firm. Mr. Fairey said that with the acute depression of the present time it was not considered opportune to make further experiments in civil aviation. He considered, he said, that they were justified in hoping for further foreign orders and maintaining their position in the home markets. (The large order for £300,000 Fairey machines which has since accrued was fully described in FLIGHT for January 8.)

In conclusion, Mr. Fairey expressed his gratitude to the Air Ministry and other Government Departments through which he had been instrumental in obtaining these overseas orders.

The retiring directors, Sqd. Ldr. M. E. Wright and Mr. A. G. Hazell, were re-elected, while the auditors, Peat, Marwick, Mitchell & Co., were reappointed.

LUXOR GOGGLE INSURANCE

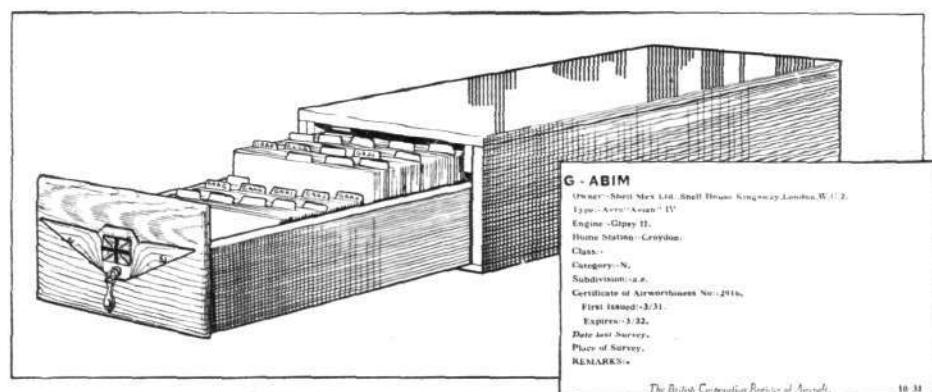
DURING 1931 E. B. Meyrowitz, Ltd., gave a policy for £1,000 covering injury to or loss of an eye with each pair of their Luxor goggles fitted with non-splinterable glass. The underwriters, who were com-

pletely satisfied with the lens and who have therefore decided to renew the policy for 1932, say:—"With reference to the insurance contract which we placed for you in respect of the year 1931, to the wearers of your Luxor goggles and/or spectacle mountings fitted with Triplex, Acetex or other safety glass, against injury to and/or loss of the sight of either or both eyes caused by the splintering of the safety glass in such goggles and/or spectacle mountings whilst being worn, we are pleased to say that, as no claims have been reported during the past year, we have been able to renew the contract with Lloyd's underwriters for the year 1932 on the same terms and conditions as heretofore."

Meyrowitz, Ltd., will therefore present to each purchaser of their goggles during 1932 one of these policies. They also want to remind previous purchasers that on receipt of 1s. they will renew the old policy for another year.

A USEFUL INDEX

INDEXING aircraft with British registration numbers is rapidly becoming a matter which is beyond the scope of an alphabetically divided book. There is a very large number of people all of whom desire to look up the owners' names, of various aircraft. These persons should invest in a copy of the British Corporation Register's new Index of British aircraft. This, as our sketch shows, is admirably arranged in card index form, and may be classified according to the wishes of the user, either under the registration letters or else under the owners' names. At the small subscription asked, namely, £2 2s. per year, it is an exceptionally good bargain, because for this same subscription supplements in the shape of additional or altered cards will be sent out fortnightly. The British Corporation Register, who incidentally are not in any way connected with Lloyd's Register of Shipping, were one of the first independent bodies to be allowed to undertake inspection for renewals of certificates of airworthiness of civil aircraft. They provide a free service, which includes a quarterly inspection of the aircraft, together with special inspections whenever required. The Corporation also has a working arrangement with similar societies in France, Italy, Germany, Scandinavia, Japan and America.



The new British Aircraft Register recently issued by the British Corporation Register.

CORRESPONDENCE TUITION

THOSE who intend to take a correspondence course in any branch of aeronautics should know in the case of the Technological Institute of Great Britain that its courses are based upon standard text-books written by accepted authorities in the aeronautical world. The subject is conveniently divided into a series of courses to suit students who wish to improve their knowledge in a particular direction, or, alternatively, cover the entire subject. All the necessary text-books are provided by the Institute without additional charges to the fees quoted for the courses, and they become the student's property. The address of this Institute is Temple Bar House, Fleet Street, London, E.C.4.



DE HAVILLAND PROGRESS

THE ELEVENTH Annual General Meeting of the De Havilland Aircraft Co., Ltd., was held on December 31 at Stag Lane Aerodrome, Edgware. Mr. A. S. Butler, Chairman of the Company presided. He said that in spite of the unprecedented world depression the profit, before allowing for income tax, for the existing year was only £2,632 less than last year. Although the volume of business, he said, had been reduced by 10 per cent., the profits were reduced by only 6 per cent., the difference being made possible by careful economy in all departments and a reduction of 33½ of the Director's fees. The bank account this year showed a credit of £37,497 instead of a debit of £32,588.

The Australian Company showed a loss, and it was pointed out that the

£8,271, being the balance of the share-premium account, recommended to be transferred at last year's meeting was insufficient to meet this loss. It was, therefore, recommended to transfer £10,000 from the profit and loss account to deal with the difference and to guard against any possible loss in exchange, as well as to ensure that the value of the asset "Shares in Subsidiary Companies" was on a conservative basis. Great economies had been effected in the working of the Australian Company and the maintenance of the necessary organisation in the face of declining sales had presented a difficult problem.

The year under review in Canada had also been one of extreme difficulty, and, while the Canadian Co. was able to make a small profit due to the volume of business transacted early in the year, it was now very slack and had, therefore, been unable to continue payment of any dividends.

In the United States the licence agreements had been terminated for a considerable cash payment, leaving the Company free to deal with that important market in future.

The South African Company had completed its first year's working and made a small profit.

The India Company, which was registered as a separate company, had had a difficult year, and its profit and loss account had shown a slight loss. The Indian Manager, who had visited this country during the year, was optimistic, but business there must be tied up with the many other vital problems with which India was faced.

Substantial orders for "Moths" had been obtained from China, Iraq and Egypt, while other foreign Governments had bought other machines, which it is hoped will lead to further orders. The first fruits of the visit to the South American markets had taken

the form of an important order recently received for the Brazilian Air Force. Reference was made to the aerodrome at Hatfield, which was now completely finished, and had excellent club premises, with restaurant, sitting rooms and full-flying facilities. Mr. Alan Butler referred to the ease with which the aerodrome was approached, and also the fact that the percentage of flying days there was greater than was the case with many other aerodromes nearer London.

A large order had been secured for "Moths" from the Royal Air Force, and the experience the Company had gained by the use of these for training purposes had led to the development of the "Tiger Moth," a number of which are already in use by the Royal Air Force.

Mr. Butler referred to the complete range marketed by the Company, which at that time consisted of the "Puss Moth," "Tiger Moth" and "Gipsy Moth." In the engine department production was down on last year, but an increasing quantity of home and foreign aircraft were now fitted with "Gipsy" engines. Co-operation was effected with the Cierva Autogiro Company and had resulted in the production of an Autogiro with a cabin-type body.

Mr. Butler said that he felt that quicker transportation of personnel, mails and merchandise would be a big factor in hastening the return of assurance and prosperity. He made reference to the notable flights which had taken place during the year.

Mr. W. E. Nixon, who had occupied the position of Secretary to the Company since its inception, had been appointed to the Board of Directors. The retiring Director, Mr. C. C. Walker, was re-elected, while the auditors, Bevis, Walker & Company, were reappointed for the ensuing year.



The Comper "Swift" in Ireland

ON December 31 last Mr. M. G. A. Scally, the Irish Aero Club member who is to fly to Colombo, Ceylon, later this month, landed at Baldonnel Aerodrome with the first Comper "Swift" to visit Ireland, G-ABPR. This machine has been loaned to him while his own is being built at Hooton. The speed and handiness of this little aircraft greatly impressed the members of the Aero Club who were on the aerodrome, and it would appear that the Comper Company might well look to Ireland for some sales. During the few weeks before leaving for Colombo, Mr. Scally proposes to make a few cross-country flights, but during the past week he has been badly handicapped by the heavy weather.

Aviation Lectures in Dublin

THAT Ireland has at least a latent air mind was revealed the week before last when Mr. O. E. Simmonds, M.P., M.A., A.F.R.Ae.S., delivered two lectures on aviation to crowded audiences at the Royal Dublin Society, Ballsbridge. Mr. Simmonds opened his first lecture, "The World Awing," with illustrations of various forms of gliders from that of Lilienthal onwards, and as this was an introduction of the sport to many of his audience it proved very popular. A film of particular interest was that showing a Boeing NB 1 in a flat spin from 4,000 ft., and was followed by details of the N.A.C.A. experiments on this phenomenon. Other slides and films illustrated types of aircraft carriers, including the experiments to utilise the R.33, H.M.S. *Courageous*, the submarine M.2, with its Parnall "Peto," and the U.S.S. *Lexington*. On the following day Mr. Simmonds took as his title "Flights of Fact and Fancy," and spoke of the difference of design in the German and British flying boats, supplementing his remarks with suitable slides and films. While speaking of

the African airway he showed maps of the present state of development of that country and pointed out that until now Africa has only been opened up in the vicinity of the railways and rivers, but with the coming of the airway, and subsequent branch lines, it would bring vast possibilities to a once "dark Continent." In an interview with our Dublin Correspondent, Mr. Simmonds said that it seemed absurd that while England was being linked by air with her furthest Dominions, the nearest of them, Ireland, was still isolated. He expressed the opinion that if a suitable base, free from the prevalent fogs in the Mersey, could be found near Liverpool, a four-hourly service of flying-boats between that city and Dublin, run on the "air ferry" principle, should prove very successful.

The late Mr. Vere Ker-Seymer

THE death of Mr. Vere Ker-Seymer, on the 8th inst., will come as a grievous personal loss to many of those who took part in the pioneer days of flying. Mr. Ker-Seymer was one of the early members of the Royal Aero Club, and served on the Committee for many years. Lt. Col. J. T. C. Moore-Brabazon, M.P., and Mr. H. E. Perrin represented the Royal Aero Club at the funeral on the 11th inst.

Mrs. Westenra's African Flight

THE HON. MRS. WESTENRA (a sister-in-law of Lady Bailey), who, with Capt. MacIntosh has made a 30,000-miles flight, through Africa in a "Puss Moth" aeroplane, arrived at Oran, Algeria, on January 8, after a non-stop flight of 300 miles from Colomb Bechar in the Sahara. They left London on November 6, arrived in Capetown on December 2, and started for home a few days later.

THE ROYAL AIR FORCE

London Gazette, January 5, 1932

Air Vice-Marshal J. McIntyre, M.C., M.B., B.Ch., is appointed an Honorary Surgeon to the King (Jan. 3) (vice Group Captain H. Cooper, D.S.O., M.R.C.S., L.R.C.P., retired).

General Duties Branch

The following are granted short service commns. as Pilot Officers on probation with effect from and with seny. of Dec. 28, 1931:—J. D. Best, R. C. M. Collard, W. J. Cox, F. W. Dixon-Wright, P. I. Harris, W. P. Harvey, E. V. Knowles (Pilot Officer, R.A.F.O.), T. F. U. Lang, H. B. Leggatt, G. R. Murphy, R. S. Ryan, W. S. Pomeroy Simonds, A. W. Sweeney, J. R. Talbot, A. J. Warford-Mein, A. P. S. Wills, G. P. Woodhouse, P. E. Woolcombe-Adams.

Wing Commander J. H. Herring, D.S.O., M.C., is granted acting rank of Group Captain (Jan. 1). The follg. Pilot Officers on probation are confirmed in rank:—L. S. Lamb (Dec. 10, 1931); R. G. C. Arnold, E. R. Berry, H. G. Blair, W. D. Dennehy, V. P. J. G. Doherty, E. A. Douglas-Jones, W. R. Farley, H. Harkness, G. Hinckley, I. V. Hue-Williams, G. T. Jarman, R. C. Richmond, F. C. Seavill, F. A. A. H. Strath, F. S. Wakeham, J. M. Warfield, R. G. Whitehead, O. P. E. Williams, J. M. Wilson, R. I. B. Winn (Dec. 29, 1931).

The follg. Squadron Leaders are restored to full pay from half pay (Dec. 24, 1931):—F. A. Norton, M. Thomas, D.F.C., A.F.C. Flying Officer P. E. Hudson takes rank and precedence as if his appointment as Flying Officer bore date Dec. 28, 1930, immediately following Flying Officer J. T. Myrons on the gradation list. Reduction takes effect from Dec. 5, 1931: Pilot Officer J. P. Massey takes rank and precedence as if his appointment as Pilot Officer

bore date Jan. 26, 1931. Reduction takes effect from Dec. 15, 1931: Air Vice-Marshal F. R. Scarlett, C.B., D.S.O., is placed on half-pay list, scale A (Dec. 31, 1931); Flight Lieut. A. J. Elliott is placed on retired list on account of ill-health (Jan. 1).

The follg. Flying Officers are transferred to Reserve (Jan. 4).—Class A. C. K. Turner, Class C.—A. R. S. Davies. The follg. relinquish their short service commns. on completion of service (Jan. 6):—Flight Lieutenants.—G. L. Gandy, P. Hill. Flying Officer.—C. G. C. Woledge.

Medical Branch

Group Captain H. Cooper, D.S.O., M.R.C.S., L.R.C.P., Honorary Surgeon to the King, is placed on retired list (Jan. 3).

RESERVE OF AIR FORCE OFFICERS

General Duties Branch

The follg. Flight Lieuts. are transferred from Class C to Class B (Stores Branch) (Sept. 7, 1931):—L. R. L. Brown, D. W. King, J. T. Vernon. (Substituted for *Gazette* Sept. 15, 1931, and October 6, 1931.)

Pilot Officer on probation E. V. Knowles relinquishes his commn. on appointment to Short Service Commn. in R.A.F. (Dec. 28, 1931).

SPECIAL RESERVE.

General Duties Branch

Pilot Officer on probation C. C. Ellis is confirmed in rank (Nov. 29, 1931).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Group Captain J. T. Cull, D.S.O., to R.A.F. Depot, Aboukir, Egypt, pending taking command, 18.12.31.

Wing Commander C. H. Elliott-Smith, A.F.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 11.11.31. I. T. Lloyd, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 9.12.31.

Squadron Leaders: E. D. Davis, to R.A.F. Depot, Uxbridge, 26.11.31. A. P. Ledger, M.B.E., to R.A.F. Depot, Uxbridge, 11.11.31. P. H. Cummings, D.F.C., to Aircraft Depot, Karachi, India, 29.11.31.

Flight Lieutenants: E. Drudge, M.B.E., to R.A.F. Depot, Uxbridge, 3.1.32. F. H. D. Henwood, D.F.C., to R.A.F. Depot, Uxbridge, 8.1.32. A. J. Rankin, A.F.C., B. T. Hood, E. A. Sullock, A.F.C., D. R. Mitchell, M.B.E., E. S. C. Davis, A.F.C., H. H. Brookes, all to R.A.F. Depot, Uxbridge, 11.11.31. E. C. Delamain, M.C., to Aircraft Depot, Karachi, India, 9.11.31. M. B. Mackay, to Aircraft Depot, Karachi, India, 22.12.31. R. E. Bain, to No. 1 (Indian Wing) Station, Kohat, India, 25.11.31. J. L. F. Fuller-Good, L. E. Goodman, both to R.A.F. Depot, Uxbridge, 22.11.31. A. F. Lingard, G. P. Macdonald, both to R.A.F. Depot, Uxbridge, 27.11.31.

Flying Officers: R. C. Higgins, R. M. Messiter, both to R.A.F. Depot, Uxbridge, 26.11.31. O. G. Williams, R. A. T. Stowell, S. J. H. Carr, D.F.C., all to R.A.F. Depot, Uxbridge, 11.11.31. T. W. Hoyle, to No. 11 Sqdn., Risalpur, India, 27.11.31. G. Francis, to School of Naval Co-operation, Lee-on-Solent, 2.1.32. F. Simpson, G. W. Monk, D.F.C., H. W. Duffey, F. W. Murison, A. Wall, all to R.A.F. Depot, Uxbridge, 22.11.31. J. C. K. Rogers, to R.A.F. Depot, Uxbridge, 6.12.31. E. A. Jones, to R.A.F. Base, Calshot, 5.1.32. D. C. J. Miller, to No. 4 Sqdn., S. Farnborough, 29.12.31.

Pilot Officers: J. P. Massey, to No. 36 Sqdn., Singapore, 22.12.31. R. C. Richmond, J. M. Wilson, both to No. 2 Sqdn., Manston, 29.12.31. W. R. Farley, G. Hinckley, I. V. Hue-Williams, J. M. Warfield, H. L. Andrews, all to No. 13 Sqdn., Netheravon, 29.12.31. F. S. Wakeman, to No. 16 Sqdn., Old Sarum, 29.12.31. E. R. Berry, to No. 7 Sqdn., Worthy Down, 29.12.31. W. D. Dennehy, to No. 9 Sqdn., Boscombe Down, 29.12.31. N. P. Samuels, to No. 10 Sqdn., Boscombe Down, 29.12.31. G. T. Jarman, to No. 19 Sqdn., Duxford, 29.12.31. G. L. Menzies, to No. 23 Sqdn., Kenley, 29.12.31. R. G. C. Arnold, E. A. Douglas-Jones, both to No. 25 Sqdn.,

Hawkinge, 29.12.31. H. G. Blair, to No. 29 Sqdn., North Weald, 29.12.31. R. G. Whitehead, to No. 35 Sqdn., Bircham Newton, 29.12.31. O. P. E. Williams, to No. 40 Sqdn., Upper Heyford, 29.12.31. H. Harkness, R. J. Bennett, both to No. 54 Sqdn., Hornchurch, 29.12.31. F. C. Seavill, to No. 57 Sqdn., Netheravon, 29.12.31. L. S. Lamb, to No. 99 Sqdn., Upper Heyford, 29.12.31. V. P. J. G. Doherty, G. L. C. Jenkins, both to No. 100 Sqdn., Donibristle, 29.12.31. R. I. B. Winn, to No. 111 Sqdn., Hornchurch, 29.12.31. F. A. A. H. Strath, to No. 207 Sqdn., Bircham Newton, 29.12.31.

Stores Branch

Flight Lieutenants: H. T. H. Copeland, to R.A.F. Depot, Uxbridge, 11.11.31. W. C. Farley, to No. 1 (Indian) Group H.Q., Peshawar, 22.12.31. A. T. Wells, to No. 2 (Indian Wing) Station, Risalpur, 22.12.31. F. W. Todd, to No. 1 (Indian Wing) Station, Kohat, 22.12.31. R. W. Stevenson, to Aircraft Depot, Karachi, India, 22.12.31. A. E. F. McCreary, to R.A.F. Base, Malta, 18.12.31.

Flying Officers: P. J. Mote, to R.A.F. Depot, Uxbridge, 22.11.31. P. H. Wilcox, to R.A.F. Depot, Uxbridge, 27.11.31.

Accountant Branch

Wing Commander H. F. Fuller, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 11.11.31.

Flight Lieutenant J. M. Hopkins, to R.A.F. Depot, Uxbridge, 11.11.31.

Flying Officer F. Rigby, to R.A.F. Depot, Uxbridge, 2.12.31.

Medical Branch

Group Captain A. W. Iredell, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 22.11.31.

NAVAL APPOINTMENTS

The following appointments have been made by the Admiralty:—

Lieut.-Commsr. J. F. M. Robertson (F.O., R.A.F.), to *Victory*, for B.T.S., Gosport.

Lieuts. (F.O., R.A.F.)—A. F. Black, to *Furious*; J. E. Fenton, to *Victory*, for 442 Flight (Jan. 1), and to *Furious*; and D. W. Mackendrick to *Valiant*, for 444 Flight (Jan. 1).

Sub-Lieut.—R. C. Tillard, attached to R.A.F. (Jan. 17).

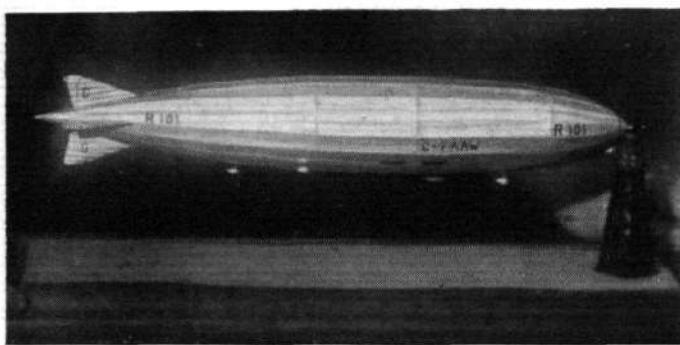
STAMPS AND MODELS

A N EXHIBITION which will interest every boy in the country is now being held in Dorland House, Lower Regent Street, but so wide is its scope that we imagine fully half those "boys" will be over 30 years of age! No one who is at all interested in transport of any kind should fail to pay a visit to this unique display. It remains open until January 23, and entrance fee for adults is only 1s., so there really isn't much excuse for not going.

The "Pageant of Postage Stamps" and "Transport Models Exhibition" is its full title, and this explains just a little of what is to be found there. The models are of amazing interest. Take the aircraft for example—for naturally we are most concerned with this side—the newest and most important method of transport. Both the Model Aircraft Club and the Society of Model Aircraft Engineers have stands, and the models they display make one wonder whether the time has not come for aircraft constructors to be "made wise" by model makers. Some of the things we saw astounded us. For instance, many of the perfect little flying machines have "spats" on their wheels and are streamlined as carefully as their

larger brethren; in one case a speed of 34 m.p.h. is the result! Another sign of the times which took us by surprise was more than one complete outfit for auto-towed gliding! Just think of it; could anything be more instructive than a small model motor-car, driven either by rubber cord or clockwork, which tows a miniature glider across the whole length of the Horticultural Hall, while the glider flies at a height of somewhere about 6 ft.? Then again, the provision for combating torque reaction is certainly well worth a study. In these models we understand that the large airscrews, used together with gear-driven rubber methods of propulsion, produce really serious torque, so much so that the wings often have to be set at a difference in incidence of as much as 4½ deg. To overcome such a drawback we were shown a model with two airscrews, running on the same shaft, but in opposite directions, in the same manner as was tried on one of the Italian Schneider Trophy Racers. Besides the rubber-driven models there are also compressed-air and petrol motors to be seen, the latter being beautiful little specimens of mechanism giving out ½ h.p.

To us, most attractive of all, however, were the many



Mr. P. Childs' excellent model of R. 101 at the Transport Models Exhibition

scale models of actual aircraft, made not merely as decoration for the windows of some manufacturers showroom, but as flying models. We could not possibly enter into details of the large variety on view in this class, but any visitor to the T.M.A.C. stand will find an array of so many types that he should have no difficulty in finding something which he will consider worth purchasing, be it a little Comper "Swift," a Westland "Wapiti," a Hawker "Hart," or what not. Two other things struck us in this section; the first was a complete scale model parachute which we were told was sent up in a model aeroplane and which dropped and saved the life of a perfect dummy pilot after a predetermined interval. The other was a different class of model altogether, and that was the ultra-light indoor type. In this are models so incredibly delicate that it is difficult to believe they have been made by man. We saw one which flew on and on, and when we were allowed to handle it, albeit with bated breath and in a gingerly fashion, we found that, although it was a biplane with a wing span of some 6 in., it weighed just one-sixteenth of an ounce!

Other exhibits included models to scale from many of the important aircraft firms, such as Compers, Imperials, Vickers and Supermarines, most of which have been seen at various trade shows from time to time.

The (dare we say it?) less important forms of transport were represented by models of docks, yachts, ships, omnibuses, railway trains, A.A. scouts and telephone boxes, motor-cycles and every other thing which all boys covet.

Then last, but by no means least, there, on an upper floor, was the section devoted to postage stamps.

In the main this section is devoted to stamp collecting in all its spheres of activity, and, fascinating though it is, we in FLIGHT are only concerned with the particular aspect of it dealing with aeronautics. In a way, we were rather disappointed not to find more set aside solely for the air mail side of stamp collecting—a branch that is growing more and more popular every day, and even developing into a "sect" apart from philately. However, amongst the exhibits there were several very noteworthy displays devoted to air post items, of which mention should be made of the following:—

A few valuable examples of stamps associated with air mail flights, carried out by pioneer aviators, such as the "Hawker," Transatlantic air mail stamp of Newfoundland, the "De Pinedo" and "Miss Columbia" issues of the same Colony; souvenir stamp of the first Ross-Smith England-Australia flight, and some scarce misprints of the Papuan air mail issues.—Shown by Mrs. Anson McCleverty.

A selection of old prints, photographs, and post cards illustrating the rise of aviation, commencing with the legendary "Flying Man" of 1490, and including post cards carried by the first aerial posts in Great Britain; photographs, stamps and letters illustrating the Polar flights of Amundsen and Byrd, 1925-6.—Shown by Miss R. Orme.

An exhibit of "Crash Covers," namely: Letters recovered from mails rescued from aeroplanes that have crashed, or from wrecked and torpedoed vessels.—Shown by Miss W. Penn Gaskell.

A collection of official air stamps depicting pre-war and post-war types of aeroplanes, Zeppelins, historical flights, etc.; also a representative collection of air post stamps of the British Empire.—Shown by Brig. Gen. R. Ridgway.

Stamps issued by private companies for conveyance of messages by carrier pigeons, between Great Barrier Island and the mainland of New Zealand, before the establishment of a regular postal communication.—Shown by A. J. Sefi.

Finally, amongst the stallholders, Francis J. Field, Ltd., of Sutton Coldfield, had a most attractive display devoted entirely to air mail covers, including their excellent "Blue" De Luxe covers—a card folder containing flown cover, map and main particulars of the particular service—to which we have already referred in FLIGHT.

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IMPORTS AND EXPORTS

AEROPLANES, airships, balloons and parts thereof (not shown separately before 1910).

For 1910 and 1911 figures see FLIGHT for January 25, 1912.

For 1912 and 1913, see FLIGHT for January 17, 1914.

For 1914, see FLIGHT for January 15, 1915, and so on yearly, the figures for 1930 being given in FLIGHT, January 16, 1931.

Imports.		Exports.		Re-exports.	
1930.	1931.	1930.	1931.	1930.	1931.
£	£	£	£	£	£
Jan. ... 2,987	7,965	147,935	142,596	—	1,074
Feb. ... 2,460	3,303	226,049	110,587	1,000	1,293
Mar. ... 744	5,615	156,098	83,088	802	3,441
April ... 2,959	2,216	213,390	213,401	79	530
May 11,706	1,964	158,460	275,382	2,550	198
June 15,029	6,780	252,443	78,298	1,060	361
July 14,216	1,790	170,594	177,006	938	131
Aug. 5,382	3,556	146,564	153,834	6,912	2,316
Sept. 2,757	1,088	109,363	218,987	1,730	1,074
Oct. ... 3,502	1,863	140,235	124,810	355	4,505
Nov. 13,849	3,097	162,116	124,374	1,000	1,004
Dec. ... 3,541	654	167,697	159,104	499	1,576
101,222	39,891	2,050,934	1,861,467	16,925	17,503

* * * * *

PUBLICATIONS RECEIVED

The David Brown Hob Book. David Brown & Sons (Huddersfield), Ltd., Park Works, Lockwood, Huddersfield.

Daily Calendar, 1932. Mullard Wireless Service Co., Ltd., Mullard House, Charing Cross Road, W.C.2.

* * * * *

NEW COMPANY REGISTERED

SEARLE RADIATOR CO., LTD., 53, Bayham Street, Camden Town, N.W.1.—Capital, £1,000, in £1 shares. Under agreement with the Searle Radiator Company, to carry on the business formerly carried on by C. Searle under the said style at 53, Bayham Street, N.W.1, manufacturers and repairers of radiators, wings, tanks, silencers and other automobile and aeronautical parts or fittings, etc. Directors:—C. Searle, 16, St. Augustine's Road, N.W.1, radiator specialist; and Beatrice M. Cole, 10, Dale Road, N.W.5, secretary.

* * * * *

AERONAUTICAL PATENT SPECIFICATIONS

(Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motors
The numbers in brackets are those under which the Specification will be printed and abridged, etc.)

APPLIED FOR IN 1930

Published January 14, 1932

27,452. G. H. DOWTY. Aircraft landing-wheels. (363,386.)
28,597. H. R. RICARDO. Pistons for i.c. engines. (363,417.)

APPLIED FOR IN 1931

Published January 14, 1932

2,325. G. CATTANEO. Synchronization mechanism for the firing of machine guns installed on flying machines. (363,531.)
11,477. DORNIER-METALLBAUTEN GES. and C. DORNIER. Method of storing fuel in seaplanes. (363,591.)

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